SEQUENCE LISTING

₹110> BioImage A/S

<120> AN IMPROVED METHOD FOR EXTRACTING QUANTITATIVE INFORMATION RELATING TO AN INFLUENCE ON A CELLULAR RESPONSE.

<130> 22129PC1

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<211> 1788

<212> DNA

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<220>

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gac ccc tct cag aat aca gcc cag ttg gat cag ttt gat aga at aag 144 Asp Pro Ser Gln Asn Thr Ala Gln Leu Asp Gln Phe Asp Arg Ile Lys

45

acc ctt ggc acc ggc tcc ttt ggg cga gtg atg ctg gtg aag cac aag Thr Leu Gly Thr Gly Ser Phe Gly Arg Val Met Leu Val Lys His Lys

40

50 55 60

96

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Val	Lys	Leu	Lys	Gln	Ile	Glu	His	Thr	Leu	Asn	Glu	Lys	Arg	Ile	Leu		
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_	-	_		Phe	_												
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gac	aac	tca	aac	ctg	tac	atg	gtc	atg	gag	tat	gta	gct	ggt	ggc	gag	384	:
Asp	Asn	Ser	Asn	Leu	Tyr	Met	Val	Met	Glu	Tyr	Val	Ala	Gly	Gly	Glu		
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Met	Phe	Ser	His	Leu	Arg	Arg	Ile	Gly	Arg	Phe	Ser	Glu	Pro	His	Ala		
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145	rne	туг	мта	AIG	150		Val	Беа	7111	155		. +y-	БСС	1110	160		
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Gln	Gln	Gly	Tyr	Ile	Gln	Val	Thr	Asp	Phe	Gly	Phe	e Ala	Lys	Arç	y Val		
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Lys	Gly	Arg	Thr	Trp	Thr	Leu	Cys	Gly	Thr	Pro	Glı	туг	Leu	ı Ala	a Pro		
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			_												g gct	67	2
Glu			e Lev	ı Ser	Lys			Asr	ı Lys	s Ala			o Tr	Tr	o Ala		
	210)				215)				220	J					

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Ala	Asp	Gln	Pro	Ile	Gln	Ile	Tyr	Glu	Lys	Ile	Val	Ser	Gly	Lys	Val	
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9			260					265		2,0		Lou	270	**** 9		
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				_						Gly			_	_		PO 0
Dea	пеа	275	Val	лър	ъеи	1111	280	Arg	riie	Gry	ASII	285	гуs	Asp	GIA	
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vai	290	Asp	rre	гÀЗ	ASII		гуз	пр	Pne	Ala		inr	Asp	Trp	TTE	
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220	-+-					~+~	~~~	~~+								0.60
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305	116	ıyı	GIII	Arg		vaı	GIU	AIG	PIO	Phe	ire	PIO	гуз	Pne	_	
303					310					315					320	
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			-	-	_			-	-	tat			_			1008
сту	Pro	СТА	Asp		ser	Asn	Pne	Asp	-	Tyr	Giu	GIU	Glu			
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	vaı	ьуs	Phe	GIu	_	_	Thr	ren	vaı			тте	GIU	Leu	ьуs 480	
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Tyr	Asn	Tyr	Asn	Ser	His	Asn	Val	Tyr	Ile	Met	Ala	Asp	Lys	Pro	Lys	
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-			-				-			-						
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Ser			ı Lev	Ala	a Asp	His	Туг	Glr	ı Glr	n Ası			o Ile	e Gly	y Asp	
	530	)				535	•	•			540	)				•

ggc	cct	gtc	ctt	tta	сса	gac	aac	cat	tac	ctg	tcc	acg	caa	tct	gcc	1680
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Pro	Gln	Glu	*													
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1 Lys Asp Thr Glu 65 Val	CGly Glu Pro Leu 50 Ser Lys	213> 400> Asn Phe Ser 35 Gly Gly Leu	Aequal 20 Ala 20 Gln Thr Asn Lys Asn 100	Ala 5 Ala Asn Gly His Gln 85 Phe	Ala Lys Thr Ser Tyr 70 Ile	Ala Ala Ala Phe 55 Ala Glu	Lys Lys Gln 40 Gly Met	Lys Glu 25 Leu Arg Lys Thr Val	Gly 10 Asp Val Ile Leu 90 Lys	Phe Gln Met Leu 75 Asn	Leu Phe Leu 60 Asp Glu	Lys Asp 45 Val Lys	Lys 30 Arg Lys Gln Arg	15 Trp Ile His	Clu Lys Lys Val 80 Leu	
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Arg	Phe	Tyr	Ala	Ala	Gln	Ile	Val	Leu	Thr	Phe	Glu	Tyr	Leu	His	Ser
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Leu	Asp	Leu	Ile	Tyr	Arg	Asp	Leu	Lys	Pro	Glu	Asn	Leu	Leu	Ile	Asp
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Gln	Gln	Gly	Tyr	Ile	Gln	Val	Thr	Asp	Phe	Gly	Phe	Ala	Lys	Arg	Val
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Lys	Gly	Arg	Thr	Trp	Thr	Leu	Cys	Gly	Thr	Pro	Glu	Tyr	Leu	Ala	Pro
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Ala	Asp	Gln	Pro	Ile	Gln	Ile	Tyr	Glu	Lys	Ile	Val	Ser	Gly	Lys	Val
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Arg	Phe	Pro	Ser	His	Phe	Ser	Ser	Asp	Leu	Lys	Asp	Leu	Leu	Arg	Asn
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Leu	Leu	Gln	Val	Asp	Leu	Thr	Lys	Arg	Phe	Gly	Asn	Leu	Lys	Asp	Gly
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Val	Asn	Asp	Ile	Lys	Asn	His	Lys	Trp	Phe	Ala	Thr	Thr	Asp	Trp	Ile
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Ala	Ile	Tyr	Gln	Arg	Lys	Val	Glu	Ala	Pro	Phe	Ile	Pro	Lys	Phe	Lys
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Arg	Val	Ser	Ile	Asn	Glu	Lys	Суѕ	Gly	Lys	Glu	Phe	Thr	Glu	Phe	Gly
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Arg	Ala		Ser	Lys	Gly	Glu			Phe	Thr	Gly		Val	Pro	Ile
	-	355					360					365			
Leu		Glu	Leu	Asp	Gly	_	Val	Asn	Gly	Gln	Lys	Phe	Ser	Val	Ser
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Ile	Суѕ	Thr	Thr			Leu	Pro	Val	Pro	Trp	Pro	Thr	Leu	Val	Thr
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Lys	Gln		_	Phe	Phe	Lys			Met	Pro	Glu	Gly	Tyr	Val	Gln
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Glu	Val	Lys	Phe	Glu	_	Asp	Thr	Leu	Val		Arg	Ile	Glu	Leu		
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Gly	Ile	Asp	Phe	_	Glu	Asp	Gly	Asn		Leu	Ġ1 A	His	Lys		Glu	
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Tyr	Asn	Tyr	Asn	Ser	His	Asn	Val	_	Ile	Met	Ala	Asp	_	Pro	Lys	
_	~ 3		500		•	D1	•	505	<b>3</b>	,, .	<b>.</b>	~ 1	510		G1	
Asn	GLY		Lys	vai	Asn	Pne		TIE	Arg	HIS	Asn		гуs	Asp	Gly	
		515	<b>.</b>	n1 -	7	11 <i>2</i> -	520	C)	C1-	D	m)	525	71-	G1	7 0 00	
Ser		GIN	Leu	Ala	Asp		Tyr	GIN	GID	Asn		Pro	iie	GIA	Asp	
C) · ·	530	W-1	T ou	Lou	Pro	535	7 en	uic	Tur	Lou	540	Thr	Gla	Sor	Ala	
545	PIO	vaı	Leu	Leu	550	Asp	ASII	1113	ıyı	555	361	1111	GIII	Ser	560	
	Ser	T.vs	Asn	Pro		Glu	Lvs	Ara	Asp		Met	Tle	Len	ī.eu	Glu	
Dea	oci	БуЗ	7155	565		014	2,0	9	570			***	Бец	575		
Phe	Val	Thr	Ala		Glv	Ile	Thr	His			Asp	Glu	Leu		Lys	
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	Ala	Asp	vaı	-	Pro	) Ala	ASI	ı AS			Ala	a Sei	GII		o Val	
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gac	gto	j aaa	a gac	cac	aaa	a tto	ato	t gc	c cg	c tto	c tt	c aa	g ca	a cc	c acc	144

Glu	Val	Lys 35	Asp	His	Lys	Phe	Ile 40	Ala	Arg	Phe	Phe	Lys 45	Gln	Pro	Thr	
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Gly	Met	Lys	Cys	Asp	Thr	Cys	Asp	Met	Asn	Val	His	Asn	Gln	Cys	Val	
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Arg	Ile	Tyr	Leu	Lys	Ala	Glu	Val	Thr	Asp	Glu	Lys	s Leu	His	Val	Thr	
				165	<b>5</b>				170	)				175	•	
gta	cga	gat	gca	aaa	aat	cta	ato	cct	ato	g gat	cca	a aat	ggg	ctt	tcg:	576
Val	Arg	, Asp	Ala	Lys	s Asn	Leu	Ile	Pro	Met	Asp	Pro	o Asr	Glý	Let	Ser	
			180					185	5				190	).		
gat	cct	tat	gto	g aaq	g cto	, aaa	cta	ato	cct	gad	cc	c aaq	, aat	gaç	g agc	624

Asp	Pro	_	Val	Lys	Leu	Lys		Ile	Pro	Asp	Pro		Asn	Glu	Ser	
		195					200					205				
222	Can	222	acc	aaa	acc	atc	cac	tcc	aac	cta	aat	cct	ċaσ	tgg	aat	672
	-													Trp		
-3-	210	-,		- <b>,</b> -		215					220			•		
gag	tcc	ttc	acg	ttc	aaa	tta	aaa	cct	tca	gac	aaa	gac	cgg	cga	ctg	720
Glu	Ser	Phe	Thr	Phe	Lys	Leu	Lys	Pro	Ser	Asp	Lys	Asp	Arg	Arg	Leu	
225					230					235					240	
	-	-			_		-							ttc		768
Ser	Val	Glu	Ile		Asp	Trp	Asp	Arg		Thr	Arg	Asn	Asp	Phe	Met	
				245					250					255		
gga	tcc	ctt	tcc	ttt	aat	atc	tca	gag	cta	atq	aag	atq	cca	gcc	agt	816
						-								Ala		
_			260					265					270			
gga	tgg	tat	aaa	gct	cac	aac	caa	gaa	gag	ggc	gaa	tat	tac	aac	gtg	864
Gly	Trp	Tyr	Lys	Ala	His	Asn	Gln	Glu	Glu	Gly	Glu	Туг	Tyr	Asn	Val	
		275					280					285				
						~	~~~	~~~	220	2+4	~~~	o+ 0	2.00		220	912
															aag Lys	712
110	290		GIU	GIY	лор	295		CLY	11011	1.00	300		9	, 01	2,0	
ttt	gag	aaa	gcc	aag	, cta	ggt	cct	gtt	ggt	aac	aaa	gto	ato	ago	cct	960
Phe	Glu	Lys	Ala	Lys	Leu	Gly	Pro	Val	Gly	Asn	Lys	s Val	Ile	e Ser	Pro	
305					310					315					320	
															ctc	1008
Ser	Glu	Asp	Arg	-		Pro	Ser	Asn			Asp	o Arc	y Val		Leu	
				325	•				330	,				335	)	
aca	gac	tto	: aac	: tto	e ata	ato	ı ata	cto	a a a	ı aac	i aad	g agt	: tti	t aad	g aag	1056
															, Lys	
			340					345		-	•	-	350		_	
gtg	ato	g ctt	gct	ga q	c ago	g aaq	g gga	a ac	g gaq	g gaa	a ct	g ta	c gc	c ato	c aag	1104

Val	Met	Leu 355	Ala	Asp	Arg	Lys	Gly 360	Thr	Glu	Glu	Leu	Tyr 365	Ala	Ile	Lys	
atc	ctg	aag	aag	gac	gtg	gtg	atc	cag	gac	gac	gac	gtg	gag	tgc	acc	1152
Ile	Leu	Lys	Lys	Asp	Val	Val	Ile	Gln	Asp	Asp	Asp	Val	Glu	Cys	Thr	
	370					375					380					
atg	gtg	gag	aag	cgc	gtg	ctg	gcc	ctg	ctg	gac	aag	ccg	cca	ttt	ctg	1200
Met	Val	Glu	Lys	Arg	Val	Leu	Ala	Leu	Leu	Asp	Lys	Pro	Pro	Phe	Leu	
385					390					395					400	
aca	cag	ctg	cac	tcc	tgc	ttc	cag	aca	gtg	gac	cgg	ctg	tac	ttc	gtc	1248
Thr	Gln	Leu	His		Cys	Phe	Gln	Thr	Val	Asp	Arg	Leu	Tyr		Val	
				405					410					415		
-	-		_				_		atg				_		_	1296
Met	Glu	Tyr		Asn	Gly	Gly	Asp		Met	Tyr	His	Ile		Gln	Val	
			420					425					430			
			_						ttc							1344
GIŸ	Lys		_	Glu	Pro	GIn			Phe	Tyr	Ala			ITE	Ser	
		435					440					445				1200
		_							ggg							1392
11e			Phe	Phe	Leu			Arg	Gly	Tie			Arg	Asp	ьeu	
	450					455					460			- 6		1440
-	_			-					-						gcc	1440
ьуs 465		Asn	ASD	vaı	мет 470		ASI	ser	Glu	475		; 11e	гру	116	480	•
	•				,											1 400
															agg	1488
Asp	Phe	GLY	Met	-	_	GIU	HIS	Met		_	) GIZ	y vai	. Thr		Arg	
				485					490					495		
		_			_	-			-			-			tac -	1536
Thr	Phe	Cys	_		Pro	) Asp	Туг			a Pro	Glı	ı Ile			Tyr	
			500					505					510			
cag	ccg	, tac	ggg	g aaq	y tct	gta	a gat	tg	g tgg	g gcc	y ta	c ggt	gto	gcto	gctg	1584

Gln	Pro	Tyr 515	Gly	Lys	Ser	Val	Asp 520	Trp	Trp	Ala	Tyr	Gly 525	Val	Leu	Leu	
tac	gag	atg	cta	gcc	ggg	cag	cct	ccg	ttt	gat	ggt	gaa	gat	gaa	gat	1632
Tyr	Glu	Met	Leu	Ala	Gly	Gln	Pro	Pro	Phe	Asp	Gly	Glu	Asp	Glu	Asp	
	530					535					540					
gaa	ctg	ttt	cag	tct	ata	atg	gag	cac	aac	gtg	tcc	tac	ccc	aaa	tcc	1680
	Leu	Phe	Gln	Ser		Met	Glu	His	Asn		Ser	Tyr	Pro	Lys		
545					550					555					560	
_		_	-	_	-			tgc				_			_	1728
Leu	Ser	Lys	Glu		Val	Ser	Ile	Cys	_	Gly	Leu	Met	Thr	_	Gln	
				565					570					575		
		_	_					ccc								1776
Pro	Ala	Lys	-	Leu	Gly	Cys	Gly	Pro	Glu	Gly	Glu	Arg	_	Val	Arg	
			580					585					590			
gag	cat	gcc	ttc	ttc	agg	agg	atc	gac	tgg	gag	aaa	ctg	gag	aac	agg	1824
Glu	His		Phe	Phe	Arg	Arg		Asp	Trp	Glu	Lys		Glu	Asn	Arg	
		595					600					605				
						_		aaa		_				-		1872
Glu		Gln	Pro	Pro	Phe	_	Pro	Lys	Val	Cys		_	Gly	Ala	Glu	
	610					615					620					
		_	_			_	_	gga	_		_					1920
	Phe	Asp	Lys	Phe			Arg	Gly	Gln			Leu	Thr	Pro		
625	-				630					635					640	
gat	cag	ctg	gtc	att	gct	aac	ata	gac	caa	tct	gat	ttt	gaa	ggg	ttc	1968
Asp	Gln	Leu	Val	Ile	Ala	Asn	Ile	Asp	Gln	Ser	Asp	Phe	Glu	Gly	Phe	
				645					650					655	•	
tcg	tat	gtc	aac	ccc	cag	ttt	gtg	cac	сса	atc	ttg	caa	agt	gca	gta	2016
Ser	Tyr	۷al	Asn	Pro	Gln	Phe	Val	His	Pro	Ile	Leu	Gln	Ser	Ala	Val	
			660					665	•				670	)		
ggg	cgc	gcc	atg	agt	aaa	gga	gaa	·gaa	ctt	ttc	act	gga	gtt	gto	сса	2064

Gly	Arg	Ala 675	Met	Ser	Lys	Gly	Glu 680	Glu	Leu	Phe	Thr	Gly 685	Val	Val	Pro	
att	ctt	att	gaa	tta	gat	ggc	gat	gtt	aat	ggg	caa	aaa	ttc	tct	gtt	2112
												Lys				
	690				-	695	-			_	700	-				•
agt	gga	gag	ggt	gaa	ggt	gat	gca	aca	tac	gga	aaa	ctt	acc	ctt	aaa	2160
Ser	Gly	Glu	Gly	Glu	Gly	Asp	Ala	Thr	Tyr	Gly	Lys	Leu	Thr	Leu	Lys	
705					710					715					720	
ttt	att	tgc	act	act	ggg	aag	cta	cct	gtt	сса	tgg	сса	acg	ctt	gtc	2208
Phe	Ile	Cys	Thr	Thr	Gly	Lys	Leu	Pro	Val	Pro	Trp	Pro	Thr	Leu	Val	
				725					730					735		
												tac				2256
Thr	Thr	Leu	Thr	Tyr	Gly	Val	Gln	Cys	Phe	Ser	Arg	Tyr	Pro	Asp	His	
			740					745					750			
																0204
_		-		_								gaa				2304
Met	Lys			Asp	Phe	Phe			Ala	Met	Pro	Glu		Tyr	Val	
		755					760	)				765				
								. ~-+	~~~			. +	220	262	cat	2352
												tac			Arg	2332
GIII	770	_	Thi	116	Pne	775		, Ast	ASP	GIY	780		БУЗ	1111	Arg	
	,,,					773					700	,				
act	gaa	ato	: aad	Litt	gaa	aat	gat	acc	ctt:	att	aat	. aga	ato	gag	tta	2400
															Leu	
785					790		•			795		_			800	
	•															
aaa	ggt	att	gat	ttt	. aaa	gaa	gat	t gga	aac	att	ctt	. gga	cac	: aaa	atg	2448
Lys	G13	, Ile	Asp	) Phe	. Lys	61u	ı Ası	o Gly	, Asr	ıle	e Lei	ي Gl	, His	Lys	Met	
				805	5				810	)				815	5	
gaa	tad	c aat	tat	. aad	t tca	a cat	aat	t gta	a tad	ato	ato	g gca	a gad	c aaa	a cca	2496
Glu	туз	: Ası	n Ty	. Ası	n Sei	His	s Asi	n Val	l Tyi	r Ile	e Me	t Ala	a Asp	Lys	Pro	-
			820					82	5				830	)		
aaq	y aat	gg	c ato	c aaa	a gtt	aad	tt.	c aa	a at	t aga	a ca	c aad	c at	t aaa	a gat	2544

WO 00/23615 PCT/DK99/00562

Lys	Asn	Gly 835	Ile	Lys	Val	Asn	Phe 840	Lys	Ile	Arg	His	Asn 845	Ile	Lys	Asp	
gga	agc	gtt	caa	tta	gca	gac	cat	tat	caa	caa	aat	act	cca	att	ggc	2592
Gly	Ser	Val	Gln	Leu	Ala	Asp	His	Tyr	Gln	Gln	Asn	Thr	Pro	Ile	Gly	
	850					855					860					
gat	ggc	cct	gtc	ctt	tta	cca	gac	aac	cat	tac	ctg	tcc	acg	caa	tct	2640
Asp	Gly	Pro	Val	Leu	Leu	Pro	Asp	Asn	His	Tyr	Leu	Ser	Thr	Gln		
865					870	-				875					880	
gcc	ctt	tcc	aaa	gat	ccc	aac	gaa	aag	aga	gat	cac	atg	atc	ctt	ctt	2688
Ala	Leu	Ser	Lys	Asp	Pro	Asn	Glu	Lys	Arg	Asp	His	Met	Ile	Leu	Leu	
				885					890					895		
gag	ttt	gta	aca	gct	gct	ggg	att	aca	cat	ggc	atg	gat	gaa	cta	tac	2736
Glu	Phe	Val	Thr	Ala	Ala	Gly	Ile	Thr	His	Gly	Met	Asp	Glu	Leu	Tyr	
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													•			
aaa	cct	cag	gag	taa												2751
Lys	Pro	Gln	Glu	*												
		915														
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	<	211>	916													
	<	212>	PRT													
	<	213>	Aeq	uore	a vi	ctor	ia a	nd m	ouse							
	-	:400>	. 4													
Met				Tur	· Pro	Ala	Asn	Asn	Ser	Thr	· Ala	. Ser	Glr	n Asc	val	
1		1100	, ,,,,	5		, ,,,,,,			10					15		
	Asr	a Ara	r Phe		Arc	ı Lvs	Glv	, Ala		Arc	ı Glr	. Lvs	Asr		His	
			20		• • • • •	,		25			,	,-	30			
Glu	Val	Lys		) His	. Lys	. Phe	: Ile		Arc	, Phe	Phe	e Lys		n Pro	Thr	
		35			4	_	40		-			45				
Phe	Cys	s Ser	His	су Су	s Thi	Asp	Phe	·Ile	Tr	Gly	y Phe	e Gly	, Lys	s Gli	n Gly	
•	50			_		55					60					
Phe	Glr	ı Cys	s Glr	ı Val	L Cys	з Суз	Phe	e Val	. Val	L His	s Lys	s Arg	g Cy:	s His	s Glu	

Phe	Val	Thr	Phe	Ser 85	Cys	Pro	Gly	Ala	Asp 90	Lys	Gly	Pro	Asp	Thr 95	Asp
Asp	Pro	Arg		Lys	His	Lys	Phe	Lys 105	Ile	His	Thr	Tyr	Gly	Ser	Pro
Thr	Phe	Cvs	100 Asp	His	Cvs	Glv	Ser		Leu	Tvr	Glv	Leu	110 Ile	His	Gln
••••		115	op		Cys	O. J	120	200		- ] -	017	125			02
Gly	Met		Cys	Asp	Thr	Cys		Met	Asn	Val	His		Gln	Cys	Val
•	130	•	-	•		135	•				140			-	
Ile	Asn	Asp	Pro	Ser	Leu	Cys	Gly	Met	Asp	His	Thr	Glu	Lys	Arg	Gly
145					150					155					160
Arg	Ile	Tyr	Leu	Lys	Ala	Glu	Val	Thr	Asp	Glu	Lys	Leu	His	Val	Thr
				165					170					175	
Val	Arg	Asp	Ala	Lys	Asn	Leu	Ile	Pro	Met	Asp	Pro	Asn	Gly	Leu	Ser
			180					185					190		
Asp	Pro	Tyr	Val	Lys	Leu	Lys	Leu	Ile	Pro	Asp	Pro	Lys	Asn	Glu	Ser
		195					200					205			
Lys		Lys	Thr	Lys	Thr		Arg	Ser	Asn	Leu		Pro	Gln	Trp	Asn
<b>a</b> .	210					215		5			220	_	_		<b>-</b>
	Ser	Phe	Thr	Phe	_	Leu	гуз	Pro	Ser		гуѕ	Asp	Arg	Arg	
225	V = 1	Cl.	Tlo	Trn.	230	Tro	) en	Ara	ሞb ~	235	Ara	Aen	Asp	Pho	240 Met
SEI	vai	GIU	116	245	ASP	пр	АЗР	Arg	250		ALG	ASII	дор	255	
Glv	Ser	Leu	Ser		Glv	Val	Ser	Glu			Lvs	Met	Pro		
			260		1			265			-1-		270		
Gly	Trp	Tyr	Lys	Ala	His	Asn	Gln	Glu	Glu	Gly	Glu	Tyr	Tyr	Asn	Val
		275					280					285			
Pro	Ile	Pro	Glu	Gly	Asp	Glu	Glu	Gly	Asn	Met	Glu	Leu	Arg	Gln	Lys
	290					295					300	,			
Phe	Glu	Lys	Ala	Lys	Leu	Gly	Pro	Val	Gly	Asn	Lys	Val	Ile	Ser	Pro
305	-				310					315	ı				320
Ser	Glu	Asp	Arg	Lys	Gln	Pro	Ser	Asn	Asn	Leu	Asp	Arg	, Val	Lys	Leu
				325					330				÷	335	
Thr	Asp	Phe	Asn	Phe	Leu	Met	Val	Lèu	Gly	Lys	Gly	Ser	Phe		Lys
			340					345					350		
Val	Met			Asp	Arg	Lys			Glu	ı Glu	Lev		Ala	Ile	: Lys
• .	_	355		_			360		_	_	_	365		_	
ше		_	ьуs	Asp	·Val			e GIn	ASP	Asp	_		Glu	-Cys	Thr
M△+	370 Val		· T··-	. n~~	. 1/21	375			LIA	1 Ac-	380		o Pro	, ph	LA
385		. GIU	. гу	. WIG	390		· WIC	. тег	. пес	395	_	, ET(	י בבנ	, 1116	400
											-				

Thr	Gln	Leu	His	Ser	Cys	Phe	Gln	Thr	Val	Asp	Arg	Leu	Tyr	Phe	Val
				405					410					415	
Met	Glu	Tyr	Val	Asn	Gly	Gly	Asp	Leu	Met	Tyr	His	Ile	Gln	Gln	Val
	•		420					425					430		
Gly	Lys	Phe	Lys	Glu	Pro	Gln	Ala	Val	Phe	Tyr	Ala	Ala	Glu	Ile	Ser
		435					440					445			
Ile	Gly	Leu	Phe	Phe	Leu	His	Lys	Arg	Gly	Ile	Ile	Tyr	Arg	Asp	Leu
	450					455					460				
Lys	Leu	Asn	Asn	Val	Met	Leu	Asn	Ser	Glu	Gly	His	Ile	Lys	Ile	Ala
465					470					475					480
Asp	Phe	Gly	Met	Cys	Lys	Glu	His	Met	Met	Asp	Gly	Val	Thr	Thr	Arg
				485					490					495	
Thr	Phe	Cys	Gly	Thr	Pro	Asp	Tyr	Ile	Ala	Pro	Glu	Ile	Ile	Ala	Tyr
			500			-		505					510		
Gln	Pro	Tyr	Gly	Lys	Ser	Val	Asp	Trp	Trp	Ala	Tyr	Gly	Val	Leu	Leu
		515					520					525			
Tyr	Glu	Met	Leu	Ala	Gly	Gln	Pro	Pro	Phe	Asp	Gly	Glu	Asp	Glu	Asp
	530					535					540				
Glu	Leu	Phe	Gln	Ser	Ile	Met	Glu	His	Asn	Val	Ser	Tyr	Pro	Lys	Ser
545					550					555					560
Leu	Ser	Lys	Glu	Ala	Val	Ser	Ile	Суѕ	Lys	Gly	Leu	Met	Thr	Lys	Gln
				565					570					575	
Pro	Ala	Lys	Arg	Leu	Gly	Cys	Gly	Pro	Glu	Gly	Glu	Arg	Asp	Val	Arg
			580					585					590		
Glu	His	Ala	Phe	Phe	Arg	Arg	Ile	Asp	Trp	Glu	Lys	Leu	Glu	Asn	Arg
		595					600					605			
Glu	Ile	Gln	Pro	Pro	Phe	Lys	Pro	Lys	Val	Cys	Gly	Lys	Gly	Ala	Glu
	610					615					620				
Asn	Phe	Asp	Lys	Phe	Phe	Thr	Arg	Gly	Gln			Leu	Thr	Pro	Pro
625					630					635					640
Asp	Gln	Lev	Val	Ile	Ala	Asn	Ile	Asp	Glr	Ser	Asp	Phe	Glu	Gly	Phe
				645	Ì				650	)			7	655	
Ser	Туг	· Val	. Asn	Pro	Gln	Phe	· Val	His	Pro	Ile	Leu	Glr	Ser	Ala	Val
			660	)		-		665	•				670	)	
Gly	/ Arg	, Ala	Met	Ser	Lys	Gly	/ Glu	Glu	Let	ı Phe	Thr	G17	/ Val	. Val	Pro
		675	5				680	)				685	5		
Ϊle	e Lev	ı Val	l Glu	ı Lev	a Asp	Gl3	/ Asp	Val	. Asr	ı Gly	Glr	Lys	Phe	Ser	Val
•	690	)				695	5				700	)			
Ser	: Gl	/ Glu	ı Gly	/ Glu	ı Gly	Asp	) Ala	Thr	Ty	c Gly	/ Lys	. Let	Thi	Leu	Lys
705	5				710	)				715	<b>5</b>				720

1.

Phe	Ile	Cys	Thr		Gly	Lys	Leu	Pro		Pro	Trp	Pro	Thr		Val
				725					730					735	
Thr	Thr	Leu	Thr	Tyr	Gly	Val	Gln	Cys	Phe	Ser	Arg	Tyr	Pro	Asp	His
			740					745					750		
Met	Lys	Gln	His	Asp	Phe	Phe	Lys	Ser	Ala	Met	Pro	Glu	Gly	Tyr	Val
		755					760					765			
Gln	Glu	Arg	Thr	Ile	Phe	Tyr	Lys	Asp	Asp	Gly	Asn	Tyr	Lys	Thr	Arg
	770					775					780				
Ala	Glu	Val	Lys	Phe	Glu	Gly	Asp	Thr	Leu	Val	Asn	Arg	Ile	Glu	Leu
785					790					795					800
Lys	Gly	Ile	Asp	Phe	Lys	Glu	Asp	Gly	Asn	Ile	Leu	Gly	His	Lys	Met
				805					810					815	
Glu	Tyr	Asn	Tyr	Asn	Ser	His	Asn	Val	Tyr	Ile	Met	Ala	Asp	Lys	Pro
			820					825					830		
Lys	Asn	Gly	Ile	Lys	Val	Asn	Phe	Lys	Ile	Arg	His	Asn	Ile	Lys	Asp
		835					840					845			
Gly	Ser	Val	Gln	Leu	Ala	Asp	His	Tyr	Gln	Gln	Asn	Thr	Pro	Ile	Gly
	850					855					860				
Asp	Gly	Pro	Val	Leu	Leu	Pro	Asp	Asn	His	Tyr	Leu	Ser	Thr	Gln	Ser
865					870					875					880
Ala	Leu	Ser	Lys	Asp	Pro	Asn	Glu	Lys	Arg	Asp	His	Met	Ile	Leu	Leu
				885					890					895	
Glu	Phe	Val	Thr	Ala	Ala	Gly	Ile	Thr	His	Gly	Met	Asp	Glu	Leu	Tyr
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Lys	Pro	Gln	Glu												
		915													
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	<	220>													
			CDS												
	<	222>	(1)	(	1896	5)									
			_								-	_			
		400>													
										_			J CCC		
8/	17-1		. T			. / 7 7	. T	- D	771 ba	. ~		777	D	- Tl	T

	_	_											gtg Val			96
	7.7		20	,				25		,			30		•	
				-	-								aag			144
GIU	GIY	35	GIÀ	ASP	AIG	Int	40	GIY	Lys	Leu	IIII	45	Lys	rne	116	
_				_									gtg			192
Cys	Thr 50	Thr	Gly	Lys	Leu	Pro 55	Val	Pro	Trp	Pro	Thr 60	Leu	Val	Thr	Thr	
ctg	acc	tac	ggc	gtg	cag	tgc	ttc	agc	cgc	tac	ccc	gac	cac	atg	aag	240
Leu 65	Thr	Tyr	Gly	Val	Gln 70	Cys	Phe	Ser	Arg	Tyr 75	Pro	Asp	His	Met	Lys 80	
cag	cac	gac	ttc	ttc	aag	tcc	gcc	atg	ccc	gaa	ggc	tac	gtc	cag	gag	288
Gln	His	Asp	Phe	Phe 85	Lys	Ser	Ala	Met	Pro 90	Glu	Gly	Tyr	Val	Gln 95		
cgc	acc	atc	ttc	ttc	aag	gac	gac	ggc	aac	tac	aag	acc	cgc	gcc	gag	336
Arg	Thr	Ile	Phe 100		Lys	Asp	Asp	Gly 105		Tyr	Lys	Thr	Arg 110		Glu	
gtg	aag	ttc	gag	ggc	gac	acc	ctg	gtg	aac	cgc	atc	gag	ctg	aag	ggc	384
Val	Lys	Phe		Gly	Asp	Thr	Leu 120		Asn	Arg	Ile	Glu 125		Lys	Gly	
atc	gạc	ttc	aag	gag	gac	ggc	aac	ato	ctg	ggg	cac	aag	ctg	gaç	, tac	432
Ile	Asp 130		. Lys	Glu	Asp	Gly 135		ıIle	Leu	Gly	His		Leu ,	Glu	Tyr	
aac	tac	aac	ago	cac	aac	gto	: tat	ato	: atg	gco	gac	aag	g cag	, aag	g aac	480
Asn 145		Asn	Ser	His	150		Туг	Ile	Met	155		Lys	s Gln	Lys	160	
ġgc	ato	aaç	g gto	aac	: ttc	aac	ato	c cgc	cac	aac	ato	gaç	g gac	ggo	c agc	528
Gly	7 Ile	. Lys	s Val	. Asr 165		e Lys	: Ile	e Arg	170		ı Ile	e Glu	ı Asp	17!	y Ser	

gtg	cag	ctc	gcc	gac	cac	tac	cag	cag	aac	acc	ccc	atc	ggc	gac	ggc	576
Val	Gln	Leu		Asp	His	Tyr	Gln		Asn	Thr	Pro	Ile		Asp	Gly	
			180					185					190			
ccc	gtg	ctg	ctg	ccc	gac	aac	cac	tac	ctg	agc	acc	cag	tcc	gcc	ctg	624
Pro	Val	Leu	Leu	Pro	Asp	Asn	His	Tyr	Leu	Ser	Thr	Gln	Ser	Ala	Leu	
		195					200					205				
																672
					gag Glu											672
Ser	210	Asp	PIO	ASII	GIU	215	Arg	Asp	1112	Mec	220	ьец	Бец	GIU	THE	
	210										220					
gtg	acc	gcc	gcc	ggg	atc	act	ctc	ggc	atg	gac	gag	ctg	tac	aag	tcc	720
Val	Thr	Ala	Ala	Gly	Ile	Thr	Leu	Gly	Met	Asp	Glu	Leu	Tyr	Lys	Ser	
225					230					235					240	
										<b>.</b>						760
		-		-	gct Ala		-	_				_			_	768
СТУ	ьеи	Arg	Ser	245	MIG	GTII	MIG	261	250	ser	1111	мес	міа	255		
				- 10												
gcg	gct	cag	ggg	ggc	ggg	ggc	ggg	gag	ccc	cgt	aga	acc	gag	ggg	gtc	816
Ala	Ala	Gln	Gly	Gly	Gly	Gly	Gly	Glu	Pro	Arg	Arg	Thr	Glu	Gly	Val	
			260			,		265					270			
									.+~	~+~					++0	864
															ttc Phe	004
Cly	110	275		110	Cly	Olu	280		1100	•••	270	285				
gac	gţg	ggc	ccg	cgc	tac	acg	cag	ttg	cag	tac	ato	ggc	gag	ggc	gcg	912
Asp	Val	Gly	Pro	Arg	Tyr	Thr	Gln	Leu	Gln	Tyr	Ile	Gly	Glu	Gly	Ala	
	290	1				295					300	)	•			
																960
		_	•	-	_	_		_			_	-		_	gtg Val	960
305		Met	. val	. Ser	310		Lyı	. Ast	nis	315		, Dys	, 1111	. Ar	320	
				-	J10	-				710	•					
gcc	ato	aag	, aag	, ato	ago	ccc	tto	gaa	cat	. caç	g acc	tac	tgo	caq	g cgc	1008
Ala	Ile	E Lys	Lys	: Ile	e Ser	Pro	Phe	e Glu	ı His	s Glr	n Thi	с Ту	c Cys	s Glı	n Arg	
				325	5			•	330	)				33	5	

												cat His					1056
			-	-		_	-					gaa Glu 365					1104
-	-				_	_		-				ctg Leu					1152
_		-	_	_								tac Tyr				•	1200
-		-										aac Asn					1248
			_									acc Thr		Asp			1296
			Asp					Arg					Glu		gac Asp		1344
		Gly		-	_		Tyr		-	_	_	Trp			gcc		1392
	Glu		_	_		Ser					Lys				atc Ile 480		1440
_				_	Ile					Let					atc Ile		1488

20

			_			ctg	-						-			1536
Phe	Pro	Gly	Lys 500	His	Tyr	Leu	Asp	505	Leu	Asn	His	Ile	Leu 510	Gly	lle	
ctg	ggc	tcc	cca	tcc	cag	gag	gac	ctg	aat	tgt	atc	atc	aac	atg	aag	1584
Leu	Gly	Ser	Pro	Ser	Gln	Glu	Asp	Leu	Asn	Cys	Ile	Ile	Asn	Met	Lys	
		515					520					525				
-	-				_	tct	_			_		_	, ,	-	,,,	1632
Ala	Arg	Asn	Tyr	Leu	Gln	Ser	Leu	Pro	Ser	Lys	Thr	Lys	Val	Ala	Trp	
	530					535					540					
gcc	aag	ctt	ttc	ccc	aag	tca	gac	tcc	aaa	gcc	ctt	gac	ctg	ctg	gac	1680
Ala	Lys	Leu	Phe	Pro	Lys	Ser	Asp	Ser	Lys	Ala	Leu	Asp	Leu	Leu	Asp	
545					550					555					560	
cgg	atg	tta	acc	ttt	aac	ccc	aat	aaa	cgg	atc	aca	gtg	gag	gaa	gcg	1728
Arg	Met	Leu	Thr	Phe	Asn	Pro	Asn	Lys	Arg	Ile	Thr	Val	Glu	Glu	Ala	
				565					570					575		
ctg	gct	cac	ccc	tac	ctg	gag	cag	tac	tat	gac	ccg	acg	gat	gag	cca	1776
Leu	Ala	His	Pro	Tyr	Leu	Glu	Gln	Tyr	Tyr	Asp	Pro	Thr	Asp	Glu	Pro	
			580					585					590			
							-									
gtg	gcc	gag	gag	ccc	ttc	acc	ttc	gcc	atg	gag	ctg	gat	gac	cta	cct	1824
Val	Ala	Glu	Glu	Pro	Phe	Thr	Phe	Ala	Met	Glu	Leu	Asp	Asp	Leu	Pro	
		595					600					605				
															cag	1872
Lys		_	Leu	Lys	Glu		Ile	Phe	Gln	Glu			Arg	Phe	Gln	
	610					615					620	•	7			
	_		_		_	ccc	_	ļ								1896
		Val	Leu	Glu		Pro	*									
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<210> 6

<211> 631

<212> PRT

<213> Aequorea victoria and human

<400> 6

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Val	Glu	Leu	Asp	Gly	Asp	Val	Asn	Gly	His	Lys	Phe	Ser	Val	Ser	Gly
			20					25					30		
Glu	Gly	Glu	Gly	Asp	Ala	Thr	Tyr	Gly	Lys	Leu	Thr	Leu	Lys	Phe	Ile
		35					40					45			
Cys	Thr	Thr	Gly	Lys	Leu	Pro	Val	Pro	Trp	Pro	Thr	Leu	Val	Thr	Thr
	50					55					60				
Leu	Thr	Tyr	Gly	Val	Gln	Cys	Phe	Ser	Arg	Tyr	Pro	Asp	His	Met	Lys
65					70	•				75					80
Gln	His	Asp	Phe	Phe	Lys	Ser	Ala	Met	Pro	Glu	Gly	Tyr	Val	Gln	Glu
				85					90					95	
Arg	Thr	Ile	Phe	Phe	Lys	Asp	Asp	Gly	Asn	Tyr	Lys	Thr	Arg	Ala	Glu
			100					105					110		
Val	Lys	Phe	Glu	Gly	Asp	Thr	Leu	Val	Asn	Arg	Ile	Glu	Leu	Lys	Gly
		115					120					125			
Ile	Asp	Phe	Lys	Glu	Asp	Gly	Asn	Ile	Leu	Gly	His	Lys	Leu	Glu	Tyr
	130					135					140				
Asn	Tyr	Asn	Ser	His	Asn	Val	Tyr	Ile	Met	Ala	Asp	Lys	Gln	Lys	Asn
145					150					155					160
Gly	Ile	Lys	Val	Asn	Phe	Lys	Ile	Arg	His	Asn	Ile	Glu	Asp	Gly	Ser
				165					170					175	
Val	Gln	Leu	Ala	Asp	His	Tyr	Gln	Gln	Asn	Thr	Pro	Ile	Gly	Asp	Gly
			180					185					190		
Pro	Val	Leu	Leu	Pro	Asp	Asn	His	Tyr	Leu	Ser	Thr	Gln	Ser	Ala	Lev
		195					200					205			
Ser	Lys	Asp	Pro	Asn	Glu	Lys	Arg	Asp	His	Met	Val	Leu	Leu	Glu	Phe
	210					215					220		•		
Val	Thr	Ala	Ala	Gly	Ile	Thr	Leu	Gly	Met	Asp	Glu	Leu	Tyr	Lys	Ser
225					230					235					240
Gly	Leu	Arg	Ser	Arg	Ala	Gln	Ala	Ser	Asn	Ser	Thr	Met	Ala	Ala	Ala
				245					250	ı				255	
Ala	Ala	Gln	Gly	Gly	Gly	Gly	Gly	Glu	Pro	Arg	Arg	Thr	Glu	Gly	Va]
-			260					265					270		
Gly	Pro	Gly	Val	Pro	Gly	Glu	Val	Glu	Met	. Val	Lys	Gly	Gln	Pro	Phe
		275					280	٠.				285	,		

Asp	Val	Gly	Pro	Arg	Tyr	Thr	Gln	Leu	Gln	Tyr	Ile	Gly	Glu	Gly	Ala
	290					295					300				
Tyr	Gly	Met	Val	Ser	Ser	Ala	Tyr	Asp	His	Val	Arg	Lys	Thr	Arg	Val
305					310					315					320
Ala	Ile	Lys	Lys	Ile	Ser	Pro	Phe	Glu	His	Gln	Thr	Tyr	Cys	Gln	Arg
				325					330					335	
Thr	Leu	Arg	Glu	Ile	Gln	Ile	Leu	Leu	Arg	Phe	Arg	His	Glu	Asn	Val
			340					345					350		
Ile	Gly	Ile	Arg	Asp	Ile	Leu	Arg	Ala	Ser	Thr	Leu	Glu	Ala	Met	Arg
		355					360					365			
Asp	Val	Tyr	Ile	Val	Gln	Asp	Leu	Met	Glu	Thr	Asp	Leu	Tyr	Lys	Leu
	370					375					380				
Leu	Lys	Ser	Gln	Gln	Leu	Ser	Asn	Asp	His	Ile	Cys	Tyr	Phe	Leu	Tyr
385					390					395					400
Gln	Ile	Leu	Arg	Gly	Leu	Lys	Tyr	Ile	His	Ser	Ala	Asn	Val	Leu	His
				405					410					415	
Arg	Asp	Leu	Lys	Pro	Ser	Asn	Leu	Leu	Ser	Asn	Thr	Thr	Cys	Asp	Leu
			420					425					430		
Lys	Ile	Cys	Asp	Phe	Gly	Leu	Ala	Arg	Ile	Ala	Asp	Pro	Glu	His	Asp
		435					440					445			
His	Thr	Gly	Phe	Leu	Thr	Glu	Tyr	Val	Ala	Thr	Arg	Trp	Tyr	Arg	Ala
	450					455					460				
Pro	Glu	Ile	Met	Leu	Asn	Ser	Lys	Gly	Tyr	Thr	Lys	Ser	Ile	Asp	Ile
465	•				470					475					480
Trp	Ser	Val	Gly	Cys	Ile	Leu	Ala	Glu	Met	Leu	Ser	Asn	Arg	Pro	Ile
				485	,				490	)				495	ı
Phe	Pro	Gly	Lys	His	туг	Leu	Asp	Glr	Leu	. Asn	His	Ile	. Lev	Gly	Ile
			500	)				505	<b>,</b>				510	)	
Let	ı Gly	Ser	Pro	Ser	Gln	Glu	Asp	Lev	a Asr	Cys	: Ile	: Ile	Asr	Met	Lys
		515	•				520	)				525	5		
Ala	Arç	, Asr	туг	Leu	Glr	Ser	Leu	Pro	Sei	Lys	Thr	Lys	Val	Ala	Trp
	530	)				535	5				540	)	•		
Ala	a Lys	Leu	ı Phe	Pro	Lys	Ser	Asp	Sei	Lys	s Ala	. Let	ı Asp	Lev	ı Lev	a Asp
545	5				550	)				555	5				560
Arg	g Met	: Le	ı Thı	Phe	e Asr	n Pro	Asr	ı Lys	s Arg	j I·le	e Thi	. Val	l Gli	ı Glı	ı Ala
				565	5				570	)				575	5
Le	Ala	a His	s Pro	э Туі	r Lei	ı Glı	ı Glr	ту	r Ty	r Ası	o Pro	Th:	r Asp	o Gli	ı Pro
			580	)				585	5				590	)	
Va:	l Ala	a Glu	ı Glu	ı Pro	o Phe	e Thi	r Phe	e Ala	a Me	t Gl	ı Le	ı Ası	o Ası	e Le	ı Pro
		591	5				600	<b>)</b> .				60	5		

23

Lys Glu Arg Leu Lys Glu Leu Ile Phe Gln Glu Thr Ala Arg Phe Gln 620 610 615 Pro Gly Val Leu Glu Ala Pro 625 630 <210> 7 <211> 2160 <212> DNA <213> Aequorea victoria and human <220> <221> CDS <222> (1) ... (2160) <400> 7 48 atg qtq agc aaq qqc qag gag ctg ttc acc qgg gtg gtg ccc atc ctg Met Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu 1 5 10 15 gtc gag ctg gac ggc gac gta aac ggc cac aag ttc agc gtg tcc ggc 96 Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly 20 25 30 144 gag ggc gag ggc gat gcc acc tac ggc aag etg acc etg aag tte atc Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile 35 40 45 192 tgc acc acc ggc aag ctg ccc gtg ccc tgg ccc acc ctc gtg acc acc Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr 50 55 60 240 ctg acc tac ggc gtg cag tgc ttc agc cgc tac ccc gac cac atg aag Leu Thr Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys 65 70 75 80 288 cag cac gac ttc ttc aag tcc gcc atg ccc gaa ggc tac gtc cag gag Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu 90 95 85

cgc acc atc ttc ttc aag gac ggc aac tac aag acc cgc gcc gag

Arg	Thr	Ile	Phe 100	Phe	Lys	Asp	Asp	Gly 105	Asn	Tyr	Lys	Thr	Arg 110	Ala	Glu	
gtg	aag	ttc	gag	ggc	gac	acc	ctg	gtg	aac	cgc	atc	gag	ctg	aag	ggc	384
Val	Lys	Phe	Glu	Gly	Asp	Thr	Leu	Val	Asn	Arg	Ile	Glu	Leu	Lys	Gly	
		115					120					125				
atc	gac	ttc	aag	gag	gac	ggc	aac	atc	ctg	ggg	cac	aag	ctg	gag	tac	432
Ile	Asp	Phe	Lys	Glu	Asp	Gly	Asn	Ile	Leu	Gly	His	Lys	Leu	Glu	Tyr	
	130					135					140					
aac	tac	aac	agc	cac	aac	gtc	tat	atc	atg	gcc	gac	aag	cag	aag	aac	480
Asn	Tyr	Asn	Ser	His	Asn	Val	Tyr	Ile	Met	Ala	Asp	Lys	Gln	Lys	Asn	
145				-	150					155					160	
ggc	atc	aag	gtg	aac	ttc	aag	atc	cgc	cac	aac	atc	gag	gac	ggc	agc	528
Gly	Ile	Lys	Val	Asn	Phe	Lys	Ile	Arg	His	Asn	Ile	Glu	Asp	Gly	Ser	
				165					170					175		
gtg	cag	ctc	gcc	gac	cac	tac	cag	cag	aac	acc	ccc	atc	ggc	gac	ggc	576
Val	Gln	Leu	Ala	Asp	His	Tyr	Gln	Gln	Asn	Thr	Pro	Ile	Gly	Asp	Gly	
			180					185					190			
ccc	gtg	ctg	ctg	ccc	gac	aac	cac	tac	ctg	agc	acc	cag	tcc	gcc	ctg	624
Pro	Val	Leu	Leu	Pro	Asp	Asn	His	Tyr	Leu	Ser	Thr	Gln	Ser	Ala	Leu	
		195					200					205				
agc	aaa	gac	ccc	aac	gag	aag	cgc	gat	cac	atg	gtc	ctg	ctg	gag	ttc	672
Ser	Lys	Asp	Pro	Asn	Glu	Lys	Arg	Asp	His	Met	Val	Leu	Leu	Glu	Phe	÷
	210					215					220					
gtg	acc	gcc	gcc	ggg	atc	act	ctc	ggc	atg	gac	gag	ctg	tac	aag	tcc	720
Val	Thr	Ala	Ala	Gly	Ile	Thr	Leu	Gly	Met	Asp	Glu	Leu	Tyr	Lys	Ser	
225					230					235					240	
gga	ctc	aga	tct	cga	gct	caa	gct	tcg	aat	tcg	acc	atg	tcg	tcc	atc	768
Gly	Leu	Arg	Ser	Arg	Ala	Gln	Ala	Ser	Asn	Ser	Thr	Met	Ser	Ser	Ile	-
				245					250					255		
ttg	cca	ttc	acg	ccg	сса	gtt	gtg	aag	aga	ctg	ctg	gga	tgg	aag	aag	816

Leu	Pro	Phe	Thr 260	Pro	Pro	Val	Val	Lys 265	Arg	Leu	Leu	Gly	Trp 270	Lys	Lys	
tca	gct	ggt	ggg	tct	gga	gga	gca	ggc	gga	gga	gag	cag	aat	ggg	cag	864
Ser	Ala	Gly	Gly	Ser	Gly	Gly	Ala	Gly	Gly	Gly	Glu	Gln	Asn	Gly	Gln	
		275					280					285				
gaa	gaa	aag	tgg	tgt	gag	aaa	gca	gtg	aaa	agt	ctg	gtg	aag	aag	cta	912
Glu	Glu	Lys	Trp	Cys	Glu	Lys	Ala	Val	Lys	Ser	Leu	Val	Lys	Lys	Leu	
	290					295					300					
aag	aaa	aca	gga	cga	tta	gat	gag	ctt	gag	aaa	gcc	atc	acc	act	caa	960
Lys	Lys	Thr	Gly	Arg	Leu	Asp	Glu	Leu	Glu	Lys	Ala	Ile	Thr	Thr	Gln	
305					310					315					320	
aac	tgt	aat	act	aaa	tgt	gtt	acc	ata	сса	agc	act	tgc	tct	gaa	att	1008
Asn	Cys	Asn	Thr	Lys	Суѕ	Val	Thr	Ile	Pro	Ser	Thr	Cys	Ser	Glu	Ile	
				325					330				-	335		
tgg	gga	ctg	agt	aca	cca	aat	acg	ata	gat	cag	tgg	gat	aca	aca	ggc	1056
Trp	Gly	Leu	Ser	Thr	Pro	Asn	Thr	Ile	Asp	Gln	Trp	Asp	Thr	Thr	Gly	
			340					345					350			
ctt	tac	agc	ttc	tct	gaa	caa	acc	agg	tct	ctt	gat	ggt	cgt	ctc	cag	1104
Leu	Tyr	Ser	Phe	Ser	Glu	Gln	Thr	Arg	Ser	Leu	Asp	Gly		Leu	Gln	
		355					360					365				
gta	tcc	cat	cga	aaa	gga	ttg	сса	cat	gtt	ata	tat	tgc	cga	tta	tgg	1152
Val			Arg	Lys	Gly	Leu	Pro	His	val	Ile		Cys	Arg	Leu	Trp	
	370	1				375					380	)				
															aac	1200
		Pro	Asp	Lev	His	Ser	His	His	s Glu	Leu	Lys	s Ala	Ile	e Glu	a Asn	
385	ı				390	)				395	•				400	
tgo	gaa	tat	gct	ttt	aat	ctt	aaa	a aag	g gat	gaa	gta	a tgt	gta	a aac	cct	1248
Cys	Glu	туі	Ala	Phe	e Asr	Leu	Lys	Lys	s Asp	Glu	ı Val	l Cys	va.	L Asr	n Pro	
				405	5				410	)				415	5	
tac	: cac	c tat	cac	g aga	a gtt	gag	g aca	a cc	a gti	ttç	g cc	t cca	a gta	a tta	a gtg	1296

Tyr	His	Tyr	Gln 420	Arg	Val	Glu	Thr	Pro 425	Val	Leu	Pro	Pro	Val 430	Leu	Val		
ccc	сда	cac	acc	gag	atc	cta	aca	gaa	ctt	ccg	cct	ctg	gat	gac	tat	: 1	1344
	-								Leu								
	,	435					440					445			•		
										ı							
act	cac	tcc	att	сса	gaa	aac	act	aac	ttc	cca	gca	gga	att	gag	cca	a :	1392
Thr	His	Ser	Ile	Pro	Glu	Asn	Thr	Asn	Phe	Pro	Ala	Gly	Ile	Glu	Pro	<b>o</b>	
	450					455					460						
cag	agt	aat	tat	att	сса	gaa	acg	cca	cct	cct	gga	tat	atc	agt	gaa	a	1440
Gln	Ser	Asn	Tyr	Ile	Pro	Glu	Thr	Pro	Pro	Pro	Gly	Tyr	Ile	Ser	Gl	u	
465					470					475					48	0	
gat	gga	gaa	aca	agt	gac	caa	cag	ttg	aat	caa	agt	atg	gac	aca	gg	С	1488
Asp	Gly	Glu	Thr	Ser	Asp	Gln	Gln	Leu	Asn	Gln	Ser	Met	Asp	Thr	G1	λ	
				485					490					495	5		
																	1526
									ctt -								1536
Ser	Pro	Ala			Ser	Pro	Thr		Leu	Ser	Pro	Val			s Se	r	
			500	•				505	•				510	)			
							• • •	. +		0.01	~~~	+++	+ ~ ~	• +a	+ <b>+</b> c	• =	1584
									gaa Glu								1001
ret	ı Asp			PIC	) var	. 1111	520		. 610	FIO	AIG	525		J Cy.	3 50	. •	
		515	,				320				•	020	,				
ata	a aca	a tai	- tat	gaa	a tta	aat	cac	ı adı	g gtt	. gga	gaa	acc	: tto	c ca	t go	ca	1632
									y Val								
	530	_				535		•		-	540						
tca	a cad	g cc	c tca	a cto	c act	gta	a gat	gg:	c ttt	aca	gad	c cca	a to	a aa	t to	ca	1680
									y Phe								
54					550					555						60	
ga	g ag	g tt	c tg	c tt	a gg	t tta	a ct	c tc	c aat	t gtt	aa	c cg	a aa	t go	c a	cg	1728
Gl	u Ar	g Ph	е Су	s Le	u G1	y Le	Le	u Se	r Ası	n Val	l Ası	n Ar	g As	n Al	a T	hr	
				56	5				57	0				57	5		
gt	a ga	a at	g ac	a ag	a ag	g ca	t at	a gg	a ag	a gga	a gt	g cg	c tt	a ta	ac t	ac	1776

Val	Glu	Met	Thr 580	Arg	Arg	His	Ile	Gly 585	Arg	Gly	Val	Arg	Leu 590	Tyr	Tyr	
ata	ggt	ggg	gaa	gtt	ttt	gct	gag	tgc	cta	agt	gat	agt	gca	atc	ttt	1824
				Val												
		595					600					605				
gtg	cag	agc	ccc	aat	tgt	aat	cag	aga	tat	ggc	tgg	cac	cct	gca	aca	1872
Val	Gln	Ser	Pro	Asn	Cys	Asn	Gln	Arg	Tyr	Gly	Trp	His	Pro	Ala	Thr	
	610					615					620					
ata	tqt	aaa	att	сса	сса	ggc	tgt	aat	ctg	aag	atc	ttc	aac	aac	cag	1920
	_			Pro												
625	_	-			630					635					640	
gaa	ttt	gct	gct	ctt	ctg	gct	cag	tct	gtt	aat	cag	ggt	ttt	gaa	gcc	1968
Glu	Phe	Ala	Ala	Leu	Leu	Ala	Gln	Ser	Val	Asn	Gln	Gly	Phe	Glu	Ala	
				645					650					655	•	
gto	: tat	cag	, cta	act	aga	atg	tgc	acc	ata	aga	atg	agt	ttt	gto	aaa	2016
Val	Tyr	Glr	Lev	Thr	Arg	Met	Cys	Thr	Ile	Arg	Met	Ser	Phe	val	. Lys	
			660	)				665	1				670	)		
ggg	g tgg	g gga	a gca	a gaa	tac	cga	agg	caç	acg	gta	aca	a agt	: act	cct	tgc	2064
Gly	, Trp	Gly	, Ala	a Glu	Tyr	Arg	Arg	Glr	Thr	Val	Thi	Sei	r Thi	r Pro	Cys	
		675	5				680	)				685	5			
tg	g att	t gaa	a cti	t cat	cto	aat	gga	a cct	: cta	caç	g tg	g tt	g ga	c aa	a gta	2112
Tr	o Ile	e Gl	ı Le	u His	Lev	Asn	Gly	Pro	Lev	ı Glı	ı Tr	p Le	u As	р Гу	s Val	
	690					695					70					
tta	a ac	t ca	q at	a das	a tco	cct	tca	a gto	g cgt	t tg	c tc	a ag	c at	g tc	a taa	2160
				t Gl												

<210> 8

705

<211> 719

<212> PRT

<213> Aequorea victoria and human

		00>													
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Val	Glu	Leu	Asp	Gly	Asp	Val	Asn	Gly	His	Lys	Phe	Ser		Ser	Gly
			20					25					30		
Glu	Gly	Glu	Gly	Asp	Ala	Thr	Tyr	Gly	Lys	Leu	Thr	Leu	Lys	Phe	Ile
		35					40					45			
Cys	Thr	Thr	Gly	Lys	Leu	Pro	Val	Pro	Trp	Pro		Leu	Val	Thr	Thr
	50					55					60				_
Leu	Thr	Tyr	Gly	Val	Gln	Cys	Phe	Ser	Arg		Pro	Asp	His	Met	
65					70					75		_		<b>61</b>	80
Gln	His	Asp	Phe		Lys	Ser	Ala	Met		Glu	Gly	Tyr	vaı		Giu
				85			_		90	_		m)		95	Clu
Arg	Thr	Ile			Lys	Asp	Asp			Tyr	. rAz	Thr	110		Glu
			100			>	•	105		. 7	. Tla	C1.			e Gly
Val	Lys			GIY	Asp	Thr	. Leu 120		. ASI.	ı Arc	, 116	125		т Бус	Gly
	_	115		- 61.	. 7.00	C1.			. T.e.i	ı Gli	, Hie			ı Glı	ı Tyr
11€			э гуз	s GIV	ı Asp	135		1116	. Dec	ı Gı	140		3 20		1 -
7	130			- Uic	n Nen			· T16	Met	- Ala			s Gl	n Lys	s Asn
145		C ASI	ıı se	L HIS	150					15		- <b>-</b>		•	160
		a T.v	e Va	1 Ası			s Ile	Arc	r Hi:			e Gl	u As	p Gl	y Ser
GI	Y II'	е гу	s va.	16		, 25,1			17					17	
Va	ı Gl	n Le	13 Al			s Tv:	r Glı	n Gli	n As:	n Th	r Pr	o Il	e Gl	y As	p Gly
• • • •		. 20	18			-		18					19		
Pr	o Va	l Le			o Ası	o As:	n Hi:	з Ту:	r Le	u Se	r Th	r Gl	n Se	r Al	a Leu
		19			_		20					20			
Se	r Ly	s As	p Pr	o As	n Gl	u Ly	s Ar	g As	p Hi	s Me	t Va	l Le	u Le	u Gl	u Phe
	21					21					22				
Va	l Th	r Al	a Al	a Gl	y Il	e Th	r Le	u Gl	у Ме	t As	sp G1	u Le	eu Ty	r Ly	s Ser
22	5				23	0				23	35				240
Gl	y Le	eu Ai	g Se	r Ar	g Al	a Gl	n Al	a Se	r As	sn Se	er Th	ır Me	et Se	er Se	er Ile
				24	5				25	50				25	55
Le	u Pr	o Pl	ne Th	ır Pı	o Pr	o Va	ıl Va	1 Ly	s Aı	cg Le	eu Le	eu G	ly T	rp Ly	ys Lys
			2								-			70	
. S€	er Al	la G	ly G	Ly Se	er Gl	y G1	Ly Al	a Gl	Ly G	ly G	ly G	lu G	ln A	sn G	ly Gln
			75				28						85		
G]	lu G	lu L	ys T	rp C	ys Gl	u Ly	ys Al	la Va	al L	ys S	er L	eu V	al L	ys L	ys Leu
	2	90				29	95				3	00			

Lys	Lys	Thr	Gly	Arg	Leu	Asp	Glu	Leu	GIV			.a 1.	16 I	IIL	1111		
305					310					31	•					320	
Asn	Ċys	Asn	Thr	Lys	Cys	Val	Thr	Ile	Pro	s Se	r Th	or C	ys S	Ser	Glu	Il€	3
				325					330	)					335		
Trp	Gly	Leu	Ser	Thr	Pro	Asn	Thr	Ile	e Ası	p Gl	n T	rp A	sp '	Thr	Thr	Gl	У
	-		340					345						350			
T.eu	Tvr	Ser	Phe	Ser	Glu	Gln	Thr	Ar	g Se	r Le	u A	sp G	ly :	Arg	Leu	G1	n
200	- 1 -	355					360						65				
Val	Sar			Lys	Glv	Leu	Pro	) Hi	s Va	1 13	le T	yr C	ys	Arg	Leu	Tr	p
V Q 1	370		9		-	375						80					
7			Aen	Leu	His			s Hi	s Gl	u Le	eu L	ys <i>I</i>	Ala	Ile	Glu	As	n
		PIC	, vob	, вес	390						95					4 C	0
385	01		. <b>ก</b> ไ -	Phe			T.V	s Lv	s As			al (	Cys	Val	Asn	Pr	0
Cys	GIU	ı Tyı	Alc	405		ПСС				LO			-		415	<b>.</b>	
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Туз	HIS	з ту			y val	CIC		42						430			
			420	r Gl	. Tl	. To:	<b>.</b> ጥክ			en P	ro i	Pro	Leu	Asr	Ası	o T	yr
Pro	o Ar			r GI	J 116	s re	44		Lu B				445	•	-	•	-
		43		e Pr	63.	. 70			en P	he F	ero :	Ala		Ile	e Gl	u P	ro
Th			r Il	e Pr	0 GI			IT W	<b>311 L</b>	110 1		460	,				
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		r As	n Ty	r Il			u 11	IL P	IOF		475	O± y	. , .			4	80
46	5				47			) _ T	a 7			Sor	Mot	Δς	n Th		
As	p Gl	у G1	u Th	r Se		b GI	n G.	rn r			3111	JCI	1100		49		3
				48		_	<b></b>			190	202	Pro	Val	. A c			Ser
Se	r Pr	o Al		u Le	eu Se	r Pr	о Т			eu	ser	FIO	val	51			
			50				_		05	~	D	חות	Ph			, s	Ser
Le	eu As	sp Le	eu Gl	ln Pi	co Va	al Th			er (	51U	PIO	мта			p c	, , ,	
		5	15					20				<b>63</b>	52		. u		בומ
I	le A	la T	yr T	yr G	lu Le			ln A	Arg '	Val	GIĀ			r Pi	ie n.	15 /	niu
		30					35					540			T		e-~
S	er G	ln P	ro S	er L	eu T	hr V	al A	sp (	Gly	Phe			Pr	0 56	er A	SII	261
	45					50					555			_	_	-	560
G	lu A	rg P	he C	ys L	eu G	ly L	eu I	.eu	Ser	Asn	Val	Asr	ı Ar	g A	sn A	.1a	Tnr
					65					570						75	
v	al G	lu M	iet T	hr A	rg A	rg H	is :	Ile	Gly	Arg	Gly	v Val	L Ar	g L	eu T	yr	Tyr
			- 5	80					585_					. 5	90		
1	1e 0	sly (	Sly G	slu V	al F	he A	la	Glu	Cys	Leu	Ser	: As	p Se	er A	la I	1e	Phe
		5	95					600					60	)5			
,	al (	Sln S	Ser I	ero A	Asn (	ys F	Asn	Ģln	Arg	Tyr	Gly	y Tr	р Н	is F	ro P	Ala	Thr
		510					515					62					

										_		<b>51</b>	7	n on	G1	<u>_</u>	•	
Val	Cys	Lys	Ile	Pro	Pro	Gly	Cys	Asn	Leu		Ile	Phe	ASII	ASII	64	υ 11		
625					630					635	•							
Glu	Phe	Ala	Ala	Leu	Leu	Ala	Gln	Ser	Val		Gln	Gly	Phe	GIU	AI	.a		
				645					650					655				
Val	Tyr	Gln	Leu	Thr	Arg	Met	Cys	Thr	Ile	Arg	Met	Ser	Phe	Val	ւ	/S		
			660					665					670		_			
Gly	Trp	Gly	Ala	Glu	Tyr	Arg	Arg	g Glr	Thr	Val	Thr	Ser	Thr	Pro	, C	ys		
		675					680					685				_		
Trp	Ile	Glu	·Leu	His	Leu	Asn	Gly	y Pro	Lev	Glr	Trp	Let	Asp	Lys	s Va	al		
	690					695					700							
Leu	Thr	Gln	Met	G1,	, Ser	Pro	Se:	r Va	l Ar	g Cys	s Ser	Sei	Met	: Sei	r			
705					710					71								
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	•	<212	> DN2	4														
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		<220	>	•			•											
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		<222	> (1	)	(215	7)												
		<400	)> 9															48
at	g to	g to	cc at	c t	cg co	a ti	cc a	cg c	cg c	ca g	tt gi	tgraa	ag ag	ga c	tg	ctg		40
Me	et S∈	er Se	er Il	e L	eu Pi	ro Pl	ne T	hr P	ro P		al Va	al L	ys A:	rg L	eu	Leu		
3	L			!	5					10					15			
																	_	96
g	ga to	gg a	ag a	ag t	ca g	ct g	gt g	igg t	ct g	ga g	ga g	ca g	gc g	ga g	iga 11	gay	,	,
G.	ly T	rp L	ys L	ys S	er A	la G	ly G	Sly S	Ger G	ly G	ly A	la G	ly G	TÀ G	тА	GIU		
	•			20					25					30				
													-					144
С	ag a	at g	gg c	ag g	jaa g	aa a	ag t	gg t	gt g	gag a	aaa g	ca c	gtg a	aa a	agt -	CT	3	144
G	ln A	sn G	ly G	ln G	ilu G	lu I	ys :	rp (	Cys (	Slu I	Lys P	lla V	/al I	ys :	Ser	ьел	1	
			35					40					45					
																		1.05
··g	rtg-a	ag. a	aagc	ta_a	aaga	aaa <u>a</u>	aca	gga _	cga	tta	gat (	gag	ctt (	gag	aaa 	gc 	с 	192
v	al I	ys I	Lys I	eu I	Lys 1	Lys '	Thr	Gly	Arg :	Leu .	Asp (	Glu	Leu (	Glu	Lys	: Al	a	
		50					55					60						

atc acc act caa aac tgt aat act aaa tgt gtt acc ata cca agc act

[le ' 65	Thr	Thr	Gln	Asn	Cys 70	Asn	Thr	Lys	Cys	Val 75	Thr	Ile	Pro	Ser	Th	r 0	
tgc Cys	tct Ser	gaa Glu	att Ile	tgg Trp 85	gga Gly	ctg Leu	agt Ser	aca Thr	cca Pro 90	aat Asn	acg Thr	ata Ile	gat Asp	cag Gln 95	tg Tr	g P	288
gat Asp	aca Thr	aca Thr	ggc Gly 100	Leu	tac Tyr	agc Ser	ttc Phe	tct Ser 105	gaa Glu	caa Gln	acc Thr	agg Arg	tct Ser	Leu	ga As	at sp	336
ggt Gly	cgt Arg	ctc Lev	Glr	gta Val	tcc Ser	cat His	cga Arg 120	Lys	gga Gly	ttg Leu	ı cca	cat His	s Val	ata L Ile	a ta	at yr	384
tgc Cys	cga Arg	g Lev	a tgg	g cgo	e tgq g Try	g cct p Pro 135	Asp	ctt Lev	cac His	c agt s Se:	t cat r Hi:	s Hi	t gaa	a cto u Lei	c a u L	ag ys	432
gca Ala	Il	t ga e Gl	a aa u As	c tg n Cy	c ga s Gl 15	a tat u Ty:	gct Ala	ttt	t aa e As	t ct n Le 15	u Ly	a aa s Ly	g ga s As	t ga p Gl	u V	gta 7al 160	480
tgi Cy:	t gt s Va	a aa l As	c cc n Pr	t ta o Ty	r Hi	c ta .s Ty	t cad	g ag n Ar	a gt g Va 17	1 G1	ig ac	a co nr Pr	ca gt	t tt	eu :	ect Pro	528
cc Pr	agt oVa	a tt	eu Va	ng co al Pi	ee eg	ga ca rg Hi	c ac	c ga r Gl 18	u I	cc ct	ta ad eu Tì	ca ga hr G	lu L	eu Pr	cg ro	cct Pro	<b>576</b>
ct Le	g ga	sp A	ac to sp T	at a yr T	ct ca	ac to	cc at er Il 20	e Pi	ca ga	aa a lu A	ac a sn T	hr A	ac t sn P	tc c	ca	gca Ala	624
g <u>c</u> G]	ly I	tt-g le G 10	ag c	ca c	ag. a 31n S	gt a er A 2	at ta sn T	at ag	tt c le P	ca g	ilu T	icg o thr E	ca c	ect o	ro	gga Gly	672

tat atc agt gaa gat gga gaa aca agt gac caa cag ttg aat caa agt

Tyr Ile Ser Glu Asp Gly Glu Thr Ser Asp Gln Gln Leu Asn Gln Ser 235 230 235 240	
atg gac aca ggc tct cca gca gaa cta tct cct act act ctt tcc cct  Met Asp Thr Gly Ser Pro Ala Glu Leu Ser Pro Thr Thr Leu Ser Pro  245  250  255	768
gtt aat cat agc ttg gat tta cag cca gtt act tac tca gaa cct gca Val Asn His Ser Leu Asp Leu Gln Pro Val Thr Tyr Ser Glu Pro Ala 260 265 270	816
ttt tgg tgt tca ata gca tat tat gaa tta aat cag agg gtt gga gaa Phe Trp Cys Ser Ile Ala Tyr Tyr Glu Leu Asn Gln Arg Val Gly Glu 275 280 285	864
acc ttc cat gca tca cag ccc tca ctc act gta gat ggc ttt aca gac  Thr Phe His Ala Ser Gln Pro Ser Leu Thr Val Asp Gly Phe Thr Asp  290  295  300	912
cca tca aat tca gag agg ttc tgc tta ggt tta ctc tcc aat gtt aac Pro Ser Asn Ser Glu Arg Phe Cys Leu Gly Leu Leu Ser Asn Val Asn 305 310 315 320	960
cga aat gcc acg gta gaa atg aca aga agg cat ata gga aga gga gtg Arg Asn Ala Thr Val Glu Met Thr Arg Arg His Ile Gly Arg Gly Val 325 330 335	1008
cgc tta tac tac ata ggt ggg gaa gtt ttt gct gag tgc cta agt gat Arg Leu Tyr Tyr Ile Gly Gly Glu Val Phe Ala Glu Cys Leu Ser Asp 340 345 350	1056
agt gca atc ttt gtg cag agc ccc aat tgt aat cag aga tat ggc tgg Ser Ala Ile Phe Val Gln Ser Pro Asn Cys Asn Gln Arg Tyr Gly Trp  355 360 365	1104
cac cct gca aca gtg tgt aaa att cca cca ggc tgt aat ctg aag atc His Pro Ala Thr Val Cys Lys Ile Pro Pro Gly Cys Asn Leu Lys Ile 370 375 380	1152
ttc aac aac cag gaa ttt gct gct ctt ctg gct cag tct gtt aat cag	1200

Phe Asn Asn Gln Glu Phe Ala Ala Leu Leu Ala Gln Ser Val Asn Gln 385 390 395 400	
ggt ttt gaa gcc gtc tat cag cta act aga atg tgc acc ata aga atg Gly Phe Glu Ala Val Tyr Gln Leu Thr Arg Met Cys Thr Ile Arg Met 405 410 415	1248
agt ttt gtg aaa ggg tgg gga gca gaa tac cga agg cag acg gta aca Ser Phe Val Lys Gly Trp Gly Ala Glu Tyr Arg Arg Gln Thr Val Thr 420 425 430	1296
agt act cct tgc tgg att gaa ctt cat ctg aat gga cct cta cag tgg  Ser Thr Pro Cys Trp Ile Glu Leu His Leu Asn Gly Pro Leu Gln Trp  435  440  445	1344
ttg gac aaa gta tta act cag atg gga tcc cct tca gtg cgt tgc tca Leu Asp Lys Val Leu Thr Gln Met Gly Ser Pro Ser Val Arg Cys Ser 450 455 460	1392
agc atg tca tgg gta ccg cgg gcc cgg gat cca ccg gtc gcc acc atg  Ser Met Ser Trp Val Pro Arg Ala Arg Asp Pro Pro Val Ala Thr Met  465 470 475 480	1440
gtg agc aag ggc gag gag ctg ttc acc ggg gtg gtg ccc atc ctg gtc Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val 485 490 495	1488
gag ctg gac ggc gac gta aac ggc cac aag ttc agc gtg tcc ggc gag Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu 500 505 510	1536
ggc gag ggc gat gcc acc tac ggc aag ctg acc ctg aag ttc atc tgc Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys 515 520 525	1584
acc acc ggc aag ctg ccc gtg ccc tgg ccc acc ctc gtg acc acc ctg  Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Leu  530 535 540	1632
acc tac ggc gtg cag tgc ttc agc cgc tac ccc gac cac atg aag cag	1680

Thr Tyr Gly(Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln 545 550 555 560	
cac gac ttc ttc aag tcc gcc atg ccc gaa ggc tac gtc cag gag cgc His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg 565 570 575	1728
acc atc ttc ttc aag gac gac ggc aac tac aag acc cgc gcc gag gtg  Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val  580 585 590	1776
aag ttc gag ggc gac acc ctg gtg aac cgc atc gag ctg aag ggc atc Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile 595 600 605	1824
gac ttc aag gag gac ggc aac atc ctg ggg cac aag ctg gag tac aac Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn 610 615 620	1872
tac aac agc cac aac gtc tat atc atg gcc gac aag cag aag aac ggc Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly 625 630 635 640	1920
atc aag gtg aac ttc aag atc cgc cac aac atc gag gac ggc agc gtg  Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val  645  650  655	1968
cag ctc gcc gac cac tac cag cag aac acc ccc atc ggc gac ggc ccc  Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro  660 665 670	2016
gtg ctg ctg ccc gac aac cac tac ctg agc acc cag tcc gcc ctg agc Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser 675 680 685	2064
aaa gac ccc aac gag aag cgc gat cac atg gtc ctg ctg gag ttc gtg Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val 690 695 700	2112
acc gcc gcc ggg atc act ctc ggc atg gac gag ctg tac aag taa	2157

PCT/DK99/00562 WO 00/23615

35

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<212> PRT

<213> Aequorea victoria and human

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230

225

240

Val Asn His Ser Leu Asp Leu Gln Pro Val Thr Tyr Ser Glu Pro Ala 260 265 270  Phe Trp Cys Ser Ile Ala Tyr Tyr Glu Leu Asn Gln Arg Val Gly Glu 275 280 285  Thr Phe His Ala Ser Gln Pro Ser Leu Thr Val Asp Gly Phe Thr Asp 290 295 300  Pro Ser Asn Ser Glu Arg Phe Cys Leu Gly Leu Leu Ser Asn Val Asn 305 310 315 320  Arg Asn Ala Thr Val Glu Met Thr Arg Arg His Ile Gly Arg Gly Val 325 330  Ser Ala Ile Phe Val Gln Ser Pro Asn Cys Asn Gln Arg Tyr Gly Trp 355 360 365  His Pro Ala Thr Val Cys Lys Ile Pro Pro Gly Cys Asn Leu Lys Ile 370 375 380  Phe Asn Asn Gln Glu Phe Ala Ala Leu Leu Ala Gln Ser Val Asn Gln 385 390 395 400  Gly Phe Glu Ala Val Tyr Gln Leu Thr Arg Met Cys Thr Ile Arg Met 405 410  Ser Thr Pro Cys Trp Ile Glu Leu His Leu Asn Gly Pro Leu Gln Trp 435 440 445  Leu Asp Lys Val Leu Thr Gln Met Gly Ser Pro Ser Val Arg Cys Ser 450  Ser Met Ser Trp Val Pro Arg Ala Arg Asp Pro Pro Pro Val Ala Thr Met 465 470 485  Glu Leu Asp Gly Glu Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val 485  Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Leu Aps Gly Asp Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val 485  Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Leu Aps Gly Asp Gly Asp Glu Leu Aps Gly Asp Glu Leu Aps Gly Asp Glu Leu Aps Gly Asp Glu Leu Val 485  Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Sou 500	Met Asp Thr Gly Ser Pro Ala Glu Leu Ser Pro Thr Thr Leu Ser Pro
Phe	245 250
Phe	Val Asp His Ser Leu Asp Leu Gln Pro Val Thr Tyr Ser Glu Pro Ala
Phe   Try   Cys   Ser   Ite   Ala   Tyr   Tyr   Glu   Leu   Asn   Gln   Arg   Val   Gly   Glu	260 265 270
The Phe His Ala Ser Gln Pro Ser Leu Thr Val Asp Gly Phe Thr Asp 290	Phe Trp Cvs Ser Ile Ala Tyr Tyr Glu Leu Asn Gln Arg Val Gly Glu
Pro   Pro	275 280 285
Pro Ser Asn Ser Glu Arg Phe Cys Leu Gly Leu Leu Ser Asn Val Asn 310	Thr Phe His Ala Ser Gln Pro Ser Leu Thr Val Asp Gly Phe Thr Asp
305	290 233
Arg Asn Ala Thr Val Glu Met Thr Arg Arg His Ile Gly Arg Gly Val 325 330 335  Arg Leu Tyr Tyr Ile Gly Gly Glu Val Phe Ala Glu Cys Leu Ser Asp 340 345 350  Ser Ala Ile Phe Val Gln Ser Pro Asn Cys Asn Gln Arg Tyr Gly Trp 355 360 365  His Pro Ala Thr Val Cys Lys Ile Pro Pro Gly Cys Asn Leu Lys Ile 370 375 380  Phe Asn Asn Gln Glu Phe Ala Ala Leu Leu Ala Gln Ser Val Asn Gln 385 390 395 400  Gly Phe Glu Ala Val Tyr Gln Leu Thr Arg Met Cys Thr Ile Arg Met 405 410 415  Ser Phe Val Lys Gly Trp Gly Ala Glu Tyr Arg Arg Gln Thr Val Thr 420 425 430  Ser Thr Pro Cys Trp Ile Glu Leu His Leu Asn Gly Pro Leu Gln Trp 435 440 445  Leu Asp Lys Val Leu Thr Gln Met Gly Ser Pro Ser Val Arg Cys Ser 450 455 460  Ser Met Ser Trp Val Pro Arg Ala Arg Asp Pro Pro Val Ala Thr Met 465 470 475 480  Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val 485 490 495  Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu 500 505	215 340
Arg Leu Tyr Tyr Ile Gly	305
Ser Ala Ile Phe Val Gln Ser Pro Asn Cys Asn Gln Arg Tyr Gly Trp 355 360 365  His Pro Ala Thr Val Cys Lys Ile Pro Pro Gly Cys Asn Leu Lys Ile 370 370 375 380  Phe Asn Asn Gln Glu Phe Ala Ala Leu Leu Ala Gln Ser Val Asn Gln 385 390 395 400  Gly Phe Glu Ala Val Tyr Gln Leu Thr Arg Met Cys Thr Ile Arg Met 405 410 415  Ser Phe Val Lys Gly Trp Gly Ala Glu Tyr Arg Arg Gln Thr Val Thr 420 425 430  Ser Thr Pro Cys Trp Ile Glu Leu His Leu Asn Gly Pro Leu Gln Trp 435 440 445  Leu Asp Lys Val Leu Thr Gln Met Gly Ser Pro Ser Val Arg Cys Ser 450  Ser Met Ser Trp Val Pro Arg Ala Arg Asp Pro Pro Val Ala Thr Met 465 470 475 480  Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val 485  Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Glu Leu 495  Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Glu Leu 500 505	325 330 335
Ser Ala Ile Phe Val Gln Ser Pro Asn Cys Asn Gln Arg Tyr Gly Trp 355 360 365  His Pro Ala Thr Val Cys Lys Ile Pro Pro Gly Cys Asn Leu Lys Ile 370 370 375 380  Phe Asn Asn Gln Glu Phe Ala Ala Leu Leu Ala Gln Ser Val Asn Gln 385 390 395 400  Gly Phe Glu Ala Val Tyr Gln Leu Thr Arg Met Cys Thr Ile Arg Met 405 410 415  Ser Phe Val Lys Gly Trp Gly Ala Glu Tyr Arg Arg Gln Thr Val Thr 420 425 430  Ser Thr Pro Cys Trp Ile Glu Leu His Leu Asn Gly Pro Leu Gln Trp 435 440 445  Leu Asp Lys Val Leu Thr Gln Met Gly Ser Pro Ser Val Arg Cys Ser 450  Ser Met Ser Trp Val Pro Arg Ala Arg Asp Pro Pro Val Ala Thr Met 465 470 475 480  Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val 485  Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Glu Leu 495  Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Glu Leu 500 505	Arg Leu Tyr Tyr Ile Gly Gly Glu Val Phe Ala Glu Cys Leu Ser Asp
His Pro Ala Thr Val Cys Lys Ile Pro Pro Gly Cys Asn Leu Lys Ile  370	340 345 350
His Pro Ala Thr Val Cys Lys Ile Pro Pro Gly Cys Asn Leu Lys Ile  370	Ser Ala Ile Phe Val Gln Ser Pro Asn Cys Asn Gln Arg Tyr Gly Trp
370   375   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380	355 360 ³⁶⁵
370   375   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380   380	His Pro Ala Thr Val Cys Lys Ile Pro Pro Gly Cys Asn Leu Lys Ile
385	370 375 380 ·
385	Phe Asn Asn Gln Glu Phe Ala Ala Leu Leu Ala Gln Ser Val Ash Gln
Ser Phe Val Lys Gly Trp Gly Ala Glu Tyr Arg Arg Gln Thr Val Thr  420	395
Ser Phe Val Lys Gly Trp Gly Ala Glu Tyr Arg Arg Gln Thr Val Thr  420  Ser Thr Pro Cys Trp Ile Glu Leu His Leu Asn Gly Pro Leu Gln Trp  435  Leu Asp Lys Val Leu Thr Gln Met Gly Ser Pro Ser Val Arg Cys Ser  450  Ser Met Ser Trp Val Pro Arg Ala Arg Asp Pro Pro Val Ala Thr Met  465  Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val  485  Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  500  Ser Web Ser Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  500  510	
Ser Thr Pro Cys Trp Ile Glu Leu His Leu Asn Gly Pro Leu Gln Trp   435	405
Ser Thr Pro Cys Trp Ile Glu Leu His Leu Asn Gly Pro Leu Gln Trp 435  Leu Asp Lys Val Leu Thr Gln Met Gly Ser Pro Ser Val Arg Cys Ser 450  Ser Met Ser Trp Val Pro Arg Ala Arg Asp Pro Pro Val Ala Thr Met 465  Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val 485  Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu 500  Ser Met Ser Trp Val Pro Arg Ala Arg Asp Pro Pro Val Ala Thr Met 480  480  501  505  510	
Leu Asp Lys Val Leu Thr Gln Met Gly Ser Pro Ser Val Arg Cys Ser  450  Ser Met Ser Trp Val Pro Arg Ala Arg Asp Pro Pro Val Ala Thr Met  465  Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val  485  Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  500  505  510	420
Leu Asp Lys Val Leu Thr Gln Met Gly Ser Pro Ser Val Arg Cys Ser  450	445
Ser   Met   Ser   Trp   Val   Pro   Arg   Ala   Arg   Asp   Pro   Pro   Val   Ala   Thr   Met	435 44 ^O
Ser Met Ser Trp Val Pro Arg Ala Arg Asp Pro Pro Val Ala Thr Met  465	460
Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val  485  Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  500  505  510	160
Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val  485  Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu  500  505  510	475
Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu 500 505 510	A65 470
Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu 500 505 510	400 493
500 505	400
500	FOE 510
ol Clarker Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe He Cys	Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys
525	525
Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Leu	
540	540
530 535  Thr Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln	
545 550 555 560	555

His	Asp	Phe	Phe	Lys	Ser	Ala	Met	Pro	Glu	Gly	Tyr	Val	Gln	Glu	Arç	Ī	
				565					570		_			575			
Thr	Ile	Phe	Phe	Lys	Asp	Asp	Gly	Asn	Tyr	Lys	Thr	Arg	Ala	Glu	Va:	L	
			580					585					590				
Lvs	Phe	Glu	Glv	Asp	Thr	Leu	Val	Asn	Arg	Ile	Glu	Leu	Lys	Gly	Il	9	
DyJ		595	3	•			600					605					
700	Pho	T.vs	Glu	Asp	Glv	Asn	Ile	Leu	Gly	His	Lys	Leu	Glu	Tyr	As	n	
АЗР	610	шуо	01-		-	615					620						
m	010	Sor	Иie	Asn	Val	Tvr	Ile	Met	Ala	Asp	Lys	Gln	Lys	Asn	G1	У	
	ASII	Ser	1113	11011	630					635					64	0	
625	<b>.</b>	17-1	ħ a n	Dhe			Arc	His	. Asr	ıle	e Glu	Asp	Gly	Ser	: Va	1	
11e	гуѕ	vaı	ASII	645		- 110	•	,	650					655	5		
	_	22.	71			- Glr	Glr	n Ası			o Ile	e Gly	y Asp	Gly	y Pi	0	
Gln	Leu	Ala			, 1 y 1	. GII	. 0	66					670	)			
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		675	•	63.		~ 7\~.			s Me	t Va	l Le		u Gl	u Ph	e V	al	
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	690		1	<b>-</b> 3	- mb			v Me	t As	n Gl			r Ly	s			
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70	5				71	U					. •						
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		<213	8> Ae	equoi	rea v	11000	oria	and.	huma								
		<220															
			l> CI													•	
		<22	2> (	1)	. (19	08)											
		< 40	0> 1	1							-~~ ~	+~ ~	, 1 + 01 - 0		atc	cta	48
a	tg g	tg a	gc a	ag g	gc g	ag g	ag c	tg t	tc a		199 9 21 - 1	7-1 1	gtg c	200 I	116	Leu	
M	et V	al S	er L	ys G		lu G	lu I	eu E	ne i		этА л	aı v	/al F	10 1	15		
	1				5					10					13		
												. <b>.</b> .		~+ <i>~</i>	+ ~ ~	aac	96
g	tc g	ag c	tg ç	gac 🤄	igc c	gac c	jta a	aac (	ggc (	cac	aag 1	ננכ י	agc (	, LY	222	Glu	
	al G	ilu I	eu F	Asp (	Sly A	lsp '	/al /	Asn (		His	Lys :	rne	Ser '	val .	SET	GTÀ	
				20					25					30			
															++~	a+ c	144
Ç	gag (	ggc	gag (	ggc	gat	gcc	acc	tac	ggc	aag	ctg	acc	ctg	aag	LLC	acc	

Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile  35 40 45	
tgc acc acc ggc aag ctg ccc gtg ccc tgg ccc acc ctc gtg acc acc  Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr  50 55 60	192
ctg acc tac ggc gtg cag tgc ttc agc cgc tac ccc gac cac atg aag Leu Thr Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys 65 70 75 80	240
cag cac gac ttc ttc aag tcc gcc atg ccc gaa ggc tac gtc cag gag Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu 85 90 95	288
cgc acc atc ttc ttc aag gac gac ggc aac tac aag acc cgc gcc gag Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu 100 105 110	336
gtg aag ttc gag ggc gac acc ctg gtg aac cgc atc gag ctg aag ggc Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly 115 120 125	384
atc gac ttc aag gag gac ggc aac atc ctg ggg cac aag ctg gag tac  Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr  130 135 140	432
aac tac aac agc cac aac gtc tat atc atg gcc gac aag cag aag aac Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn 145 150 155 160	480
ggc atc aag gtg aac ttc aag atc cgc cac aac atc gag gac ggc agc  Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser  165 170 175	528
gtg cag ctc gcc gac cac tac cag cag aac acc ccc atc ggc gac ggc Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly  180 185 190	576
ece gtg etg etg ece gae aac eac tae etg age ace eag tee gee etg	624

Pro Val Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu 195 200 205	
agc aaa gac ccc aac gag aag cgc gat cac atg gtc ctg ctg gag ttc Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe 210 215 220	672
gtg acc gcc gcc ggg atc act ctc ggc atg gac gag ctg tac aag tcc Val Thr Ala Ala Gly Ile Thr Leu Gly Met Asp Glu Leu Tyr Lys Ser 230 235 240	720
gga ctc aga tct cga gct caa gct tcc atg agc gag acg gtc atc atg Gly Leu Arg Ser Arg Ala Gln Ala Ser Met Ser Glu Thr Val Ile Met 245 250 255	768
age gag acg gtc atc tgt tcc age egg gcc act gtg atg ett tat gat  Ser Glu Thr Val Ile Cys Ser Ser Arg Ala Thr Val Met Leu Tyr Asp  260 265 270	816
gat ggc aac aag cga tgg ctc cct gct ggc acg ggt ccc cag gcc ttc Asp Gly Asn Lys Arg Trp Leu Pro Ala Gly Thr Gly Pro Gln Ala Phe 275 280 285	864
age ege gte eag ate tae eac aac eee aeg gee aat tee ttt ege gte Ser Arg Val Gln Ile Tyr His Asn Pro Thr Ala Asn Ser Phe Arg Val 290 295 300	912
gtg ggc cgg aag atg cag ccc gac cag cag gtg gtc atc aac tgt gcc Val Gly Arg Lys Met Gln Pro Asp Gln Gln Val Val Ile Asn Cys Ala 305 310 315 320	960
atc gtc cgg ggt gtc aag tat aac cag gcc acc ccc aac ttc cat cag  Ile Val Arg Gly Val Lys Tyr Asn Gln Ala Thr Pro Asn Phe His Gln  325 330 335	1008
tgg cgc gac gct cgc cag gtc tgg ggc ctc aac ttc ggc agc aag gag Trp Arg Asp Ala Arg Gln Val Trp Gly Leu Asn Phe Gly Ser Lys Glu 340 345 350	1056
gat gcg gcc cag ttt gcc gcc ggc atg gcc agt gcc cta gag gcg ttg	1104

Asp Ala Ala Gln Phe Ala Ala Gly Met Ala Ser Ala Leu Glu Ala Leu 355 360 365	
gaa gga ggt ggg ccc cct cca ccc cca gca ctt ccc acc tgg tcg gtc Glu Gly Gly Gly Pro Pro Pro Pro Pro Ala Leu Pro Thr Trp Ser Val 370 375 380	1152
ccg aac ggc ccc tcc ccg gag gag gtg gag cag cag cag aaa agg cag cagPro Asn Gly Pro Ser Pro Glu Glu Val Glu Gln Gln Lys Arg Gln Gln385390	1200
ccc ggc ccg tcg gag cac ata gag cgc cgg gtc tcc aat gca gga ggc Pro Gly Pro Ser Glu His Ile Glu Arg Arg Val Ser Asn Ala Gly Gly 405 410 415	1248
cca cct gct ccc ccc gct ggg ggt cca ccc cca cca cca gga cct ccc Pro Pro Ala Pro Pro Ala Gly Gly Pro Pro Pro Pro Pro Gly Pro Pro 420 425 430	1296
cct cct cca ggt ccc ccc cca ccc cca ggt ttg ccc cct tcg ggg gtc Pro Pro Pro Gly Pro Pro Pro Pro Gly Leu Pro Pro Ser Gly Val 435 440 445	1344
cca gct gca gcg cac gga gca ggg gga gga cca ccc cct gca ccc cct Pro Ala Ala Ala His Gly Ala Gly Gly Pro Pro Pro Ala Pro Pro 450 455 460	1392
ctc ccg gca gca cag ggc cct ggt ggt ggg gga gct ggg gcc cca ggc Leu Pro Ala Ala Gln Gly Pro Gly Gly Gly Gly Ala Gly Ala Pro Gly 465 470 475 480	1440
ctg gcc gca gct att gct gga gcc aaa ctc agg aaa gtc agc aag cag Leu Ala Ala Ala Ile Ala Gly Ala Lys Leu Arg Lys Val Ser Lys Gln 485 490 495	1488
gag gag gcc tca ggg ggg ccc aca gcc ccc aaa gct gag agt ggt cga Glu Glu Ala Ser Gly Gly Pro Thr Ala Pro Lys Ala Glu Ser Gly Arg 500 505 510	1536
agc gga ggt ggg gga ctc atg gaa gag atg aac gcc atg ctg gcc cgg	1584

41

Ser Gly Gly Gly Leu Met Glu Glu Met Asn Ala Met Leu Ala Arg 515 520 525	
aga agg aaa gcc acg caa gtt ggg gag aaa acc ccc aag gat gaa tct Arg Arg Lys Ala Thr Gln Val Gly Glu Lys Thr Pro Lys Asp Glu Ser 530 535	1632
gcc aat cag gag gag cca gag gcc aga gtc ccg gcc cag agt gaa tct Ala Asn Gln Glu Glu Pro Glu Ala Arg Val Pro Ala Gln Ser Glu Ser 545 550 555 560	1680
gtg cgg aga ccc tgg gag aag aac agc aca acc ttg cca agg atg aag Val Arg Arg Pro Trp Glu Lys Asn Ser Thr Thr Leu Pro Arg Met Lys 565 570 575	1728
teg tet tet teg gtg ace act tee gag ace caa eee tge acg eee age Ser Ser Ser Val Thr Thr Ser Glu Thr Gln Pro Cys Thr Pro Ser 580 585 590	1776
tcc agt gat tac tcg gac cta cag agg gtg aaa cag gag ctt ctg gaa Ser Ser Asp Tyr Ser Asp Leu Gln Arg Val Lys Gln Glu Leu Leu Glu 595 600 605	1824
gag gtg aag aag gaa ttg cag aaa gtg aaa gag gaa atc att gaa gcc Glu Val Lys Lys Glu Leu Gln Lys Val Lys Glu Glu Ile Ile Glu Ala 610 615 620	1872
ttc gtc cag gag ctg agg aag cgg ggt tct ccc tga  Phe Val Gln Glu Leu Arg Lys Arg Gly Ser Pro * 625 630 635	1908
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Met Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu 1 5 10 15

Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly
20 25 . 30
Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile
35 40 ⁴⁵
Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr
₅₀ 55 60
Leu Thr Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys
65 70 75 80
Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu
85 90 95
Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu
100 105 110
Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly
115 120 125
Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr
130 135 140
Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn
145 150 155 160
Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser
165 170 175
Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly
180
Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu
195
Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe
210
Val Thr Ala Ala Gly Ile Thr Leu Gly Met Asp Glu Leu Tyr Lys Ser
225 230
Gly Leu Arg Ser Arg Ala Gln Ala Ser Met Ser Glu Thr Val Ile Met
245 250 250 Ser Glu Thr Val Ile Cys Ser Ser Arg Ala Thr Val Met Leu Tyr Asp
265 270
Asp Gly Asn Lys Arg Trp Leu Pro Ala Gly Thr Gly Pro Gln Ala Pho
285
275 280 200 Ser Arg Val Gln Ile Tyr His Asn Pro Thr Ala Asn Ser Phe Arg Va
205 300
Val Gly Arg Lys Met Gln Pro Asp Gln Gln Val Val Ile Asn Cys Al
310 315 32
305  Ile Val Arg Gly Val Lys Tyr Asn Gln Ala Thr Pro Asn Phe His Gl
325 330 335

Trp	Arg	As	p A	Ala	Arg	Glr	ı Va	al T	rp			eu i	Asn	Phe	Gly			Lys	Gl	.u
				340						345		•					50		_	
Asp	Ala	Al	a (	Gln	Phe	Ala	a A.	la (	Sly	Met	A	la	Ser	Ala	Let	ı G	lu	Ala	L€	eu
		35							360						36					
Glu	Gly	Gl	У	Gly	Pro	Pr	o P:	ro :	Pro	Pro	A	la	Leu	Pro	Th:	r T	rp	Ser	Va	al
	370							75						380						
Pro	Asn	G)	У	Pro	Ser	Pr	o G	lu	Glu	۷al	. G	lu	Gln	Gln	Ly	s A	Arg	Gln	G.	ln
385						39	0						395						4	00
Pro	Gly	, Pi	co	Ser	Glu	Hi	s I	le	Glu	Arg	g A	arg	Val	Ser	As	n A	Ala	Gl7	, G	ly
					405	•					4	110						415	ò	
Pro	Pro	<b>A</b>	la	Pro	Pro	Al	a G	lу	Gly	Pro	o E	Pro	Pro	Pro	Pr	0	Gly	Pro	P	ro
				420						42							430			
Pro	Pro	o P	ro	Gly	Pro	Pr	o E	ro	Pro	Pr	0 (	Gly	Leu	Pro	) Pr	0	Ser	Gl	y V	'al
			35						440							45				
Pro	Al.	a A	la	Ala	Hi:	s GI	ly A	Ala	Gly	Gl	у	Gly	Pro	Pr	o Pi	ro	Ala	Pr	o E	Pro
	45							455						46						
Lev	ı Pr	0 A	la	Ala	Gl	n G	ly 1	Pro	Gly	Gl	У	Gly	Gl	/ Al	a G	ly	Ala	Pr	0 (	31 y
465							70						47							480
Lei	Al د	a P	Mla	Ala	a Il	e A	la (	Gly	Ala	ı Ly	rs	Leu	Ar	g Ly	s V	al	Ser	Ly	s (	Gln
					48							490						49		
G1	u Gl	u A	Ala	Se:	r Gl	уG	ly	Pro	Th	c Al	lα	Pro	Ly	s Al	a G	lu	Sea	c GJ	У.	Arg
				50							)5						510			
Se	r Gl	Ly (	Gly	Gl	y G1	y L	eu	Met	Gl	a G	lu	Met	: As	n Al	a M	1et	Le	ы A.	la	Arg
			515						52							25				
Ar	g Ai	rg :	Lys	s Al	a Th	ır G	Sln	Va]	. G1	y G.	lu	Ly	s Th	r Pi	o I	.ys	As	p G	lu	Ser
		30						535							10					
Al	a A	sn	Glı	n Gl	u G	Lu E	ro	Glu	ı Al	a A	rg	۷a	l Pr	o A	la (	Gln	Se	r G	lu	Ser
54							550						55							560
٧a	ıl A	rg	Ar	g Pr	o T	rp (	Glu	Ly	s As	n S	er	Th	r Th	ır L	eu !	Pro	Ar	g M	et	Lys
						65						57							75	
Se	er S	er	Še	r Se	er V	al'	Thr	Th	r Se	r G	lu	Th	r G	ln P	ro	Суя	s _. Th	ir P	ro	Ser
				58							85						59			
Se	er S	er	As	T q	yr S	er.	Asp	Le	u Gl	ln A	Arg	Va	1 L	ys G	ln	Gl	u Le	eu I	eu	Glu
			59							00						60				
G	lu V	al			ys G	lu	Leu	Gl	n L	ys V	/al	L	ys G	lu G	lu	Il	e I	le (	Slu	Ala
		510	1	,	•			61							520					
P			G.1	n G	lu I	eu	Arq	Ly	s A	rg (	313	7 S	er P	ro	-					
	 25				-		630							35						

<211> 2394

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atc	gac	ttc	aaα	αaα	gac	ggc	aac	atc	ctg	ggg	cac	aag	ctg	gag	ta	aC .	432
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110	130		-,, -		•	135					140		•				
	150																
aac	tac	aac	agc	cac	aac	gtc	tat	atc	atg	gcc	gac	aag	cag	aag	aa	ac	480
Asn	Tyr	Asn	Ser	His	Asn	Val	Tyr	Ile	Met	Ala	Asp	Lys	Gln	Lys	A:	sn	
145	-				150					155			· ·			60	
	é																
ggc	atc	aag	gtg	aac	ttc	aag	atc	cgc	cac	aac	atc	gag	gac	ggc	a	gc	528
Gly	Ile	Lys	Val	Asn	Phe	Lys	Ile	Arg	His	Asn	Ile	Glu	Asp	Gly	S	er	
_				165					170					175			
gtg	cag	ctc	gcc	gac	cac	tac	cag	cag	aac	acc	ccc	ato	ggc	gac	g	ıgc	576
Val	Gln	Leu	Ala	Asp	His	Tyr	Gln	Gln	Asn	Thr	Pro	ıle	e Gly	/ Asp	G	31y	
			180					185					190	)			
ccc	gtg:	cto	ctg	ccc	gac	aac	cac	tac	ctg	ago	aco	caç	g tco	gc	c (	etg	624
Pro	Val	Leu	ı Lev	Pro	Asp	Asn	His	Tyr	Leu	Ser	Thi	c Gli	n Sei	c Ala	a I	Leu	
		195	5				200	)				20	5				
ago	c aaa	gad	ccc	aac	gaç	aag	cgo	gat	cac	atq	g gt	c ct	gįct	g ga	g i	ttc	672
Sei	c Lys	. Ası	p Pro	Ası	ı Glu	Lys	Arc	g Asp	His	Met	Va.	l Le	u Le	u Gl	u I	Phe	
	210	)				215	)				22	0					
gto	g aco	c gc	c gc	c gg	g ato	act	cto	c ggc	ato	g ga	c ga	g ct	g ta	c aa	g	tcc	720
۷a.	1 Th:	r Al	a Ala	a Gl	y Ile	e Thi	Le	u Gly	y Met	t As	p Gl	u Le	u Ty	r Ly	'S	Ser	
22	5				230	)				23	5					240	
gg	a ct	c ag	a tc	t cg	a gc	c at	g ga	c gaa	a ct	g tt	c cc	c ct	c at	c tt	c	ccg	768
Gl	y Le	u Ar	g Se	r Ar	g Al	a Me	t As	p Gl	u Le	u Ph	e Pr	o Le	eu Il	e Ph	ne	Pro	
				24	5				25	0			÷	25	55		
gc	a ga	g cc	a gc	с са	g gc	c tc	t gg	c cc	c ta	t gt	g ga	ag at	tc at	tt ga	ag	cag	816
								y Pr									
			26	0				26	5				2	70			
												-					-
c	c aa	ıg ca	ag co	gg gg	jc at	g cg	c tt	c cg	c ta	ac aa	ag t	gc g	ag g	gg c	gc	tcc	86
								ne Ar									
	_		75					30					85				

gcg ggc ago Ala Gly Se 290	e atc cca r Ile Pro	ggc gag agg Gly Glu Arg 295	agc aca gat Ser Thr Asp	acc acc aag acc ca Thr Thr Lys Thr Hi	ac 912 .s
				a ggg aca gtg cgc at o Gly Thr Val Arg II 5	
				t cac ccc cac gag c o His Pro His Glu L 335	
				ng gct gag ctc tgc c nu Ala Glu Leu Cys P 350	
Asp Arg C			n Asn Leu G	ga atc cag tgt gtg a ly Ile Gln Cys Val I 365	
				gc atc cag acc aac a rg Ile Gln Thr Asn A	
			lu Glu Gln A	gt ggg gac tac gac rg Gly Asp Tyr Asp 95	
		u Cys Phe G		tg cgg gac cca tca Val Arg Asp Pro Ser 415	
		eu Pro Pro V		cat ccc atc ttt gac His Pro Ile Phe Asp 430	
Arg Ala		nr Ala Glu L		tgc cga gtg aac cga Cys Arg Val Asn Arg 445	

Ser		-	-				gag Glu								1392
	_						tat Tyr								1440
_	_						gat Asp								1488
							gac Asp 505								1536
-	-		Met	_	_		 cct Pro		-			Leu			1584
	-	Glu					gat Asp				Arg				1632
						Thr				Lys				aag Lys 560	1680
-					Gly				Arg					a cgc g Arg	1728
	_	-		Sei	_			Ser					Ala	a ccc	1776
_			r Pro				r Leu					а Ту		t gag p Glu	1824

### Coc acc act gtg ttt cct tct ggg cag atc agc cag gcc tcg gcc Phe Pro Thr Met Val Phe Pro Ser Gly Gln Ile Ser Gln Ala Ser Ala 610 615 620  #### Coc acc gcc ccc ccc caa gtc ctg ccc cag gct cca gcc cct gcc Leu Ala Pro Ala Pro Pro Gln Val Leu Pro Gln Ala Pro Ala Pro Ala 625 630 635 640  #### Coc acc gcc atg gta tca gct ctg gcc cag gcc cca gcc cct gtc Pro Ala Pro Ala Met Val Ser Ala Leu Ala Gln Ala Pro Ala Pro Val 645 650 655  #### Coc acc gcc cca gcc cct gcc ccc gcc	ttt	ccc	acc	ato	ata	ttt	cct	tct	aaa	caq	atc	agc	caq	qcc	tcq	gcc	1872
ttg gee ceg gee eet eec caa gte etg eec cag get ee gee eet gee leu Ala Pro Ala Pro Pro Gln Val Leu Pro Gln Ala Pro Ala Pro Ala Pro Ala Pro Pro Gln Val Leu Pro Gln Ala Pro Ala Ala Ala Ala Ala Ala Pro Ala Pro Ala Pro Ala Pro Ala Ala Pro Ala Pro Ala Pro Ala Pro Ala Ala Pro				_	_												
ttg gee eeg gee eet eec eaa gte etg eec eag get eea gee eet gee Leu Ala Pro Ala Pro Pro Gln Val Leu Pro Gln Ala Pro Ala Pro Ala Pro Ala Pro Ala Pro Glove eeg gee eag gee ea gee eet gee eet gee eet gee eeg gee ea gee eet gee eeg gee ee gee ee gee ee gee eec eec									-								
Leu Ala Pro Ala Pro Pro Gln Val Leu Pro Gln Ala Pro Ala Pro Ala Pro Ala Pro Gln Val Leu Pro Gln Ala Pro Ala Pro Ala Pro Ala Pro Ala Glo Gasono Gas																	
cct gct cca gcc atg gta tca gct ctg gcc cag gcc cca gcc cct gtc Pro Ala Pro Ala Met Val Ser Ala Leu Ala Gln Ala Pro Ala Pro Val 645  cca gtc cta gcc cca ggc cct cct cag gct gtg gcc cca cct gcc ccc Pro Val Leu Ala Pro Gly Pro Pro Gln Ala Val Ala Pro Pro Ala Pro 660  aag ccc acc cag gct ggg gaa gga acg ctg tca gag gcc ctg ctg cag Lys Pro Thr Gln Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu Gln 675  ctg cag ttt gat gat gaa gac ctg ggg gcc ttg ctt gct ggc aca ac tc gac cag ctg ctg ag gt gag agc ctg ggg gcc ttg ctt ggg aca agc aca Lys Pro Thr Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser Thr 690  gac cca gct gtg ttc aca gac ctg gca tcc gtc gac aca tcc gag ttt Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asp Ser Glu Phe 705  710  720  cag cag ctg ctg acc cag ggc ata cct gtg gcc ccc cac aca act gag Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu 725  730  ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740  745  750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg 2304 Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly	ttg	gcc	ccg	gcc	cct	ccc	caa	gtc	ctg	ccc	cag	gct	cca	gcc	cct	gcc	1920
cct get cea gec atg gta tea get ctg gec cag gec cea gec cet gte         1968           Pro Ala Pro Ala Met Val Ser Ala Leu Ala Gln Ala Pro Ala Pro Val 645         650         655           cca gtc cta gec cea ggc cet cet cag get gtg gec cea cet gec cec         2016           Pro Val Leu Ala Pro Gly Pro Pro Gln Ala Val Ala Pro Pro Ala Pro 660         665         670           aag cec ace cag get ggg gaa gga acg ctg tea gag gec ctg ctg cag Lys Pro Thr Gln Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu Gln 675         680         685           ctg cag ttt gat gat gaa gac ctg ggg gcc ttg ctt ggc aac agc aca 2112         2112           Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser Thr 690         695         700           gac ca get gtg ttc aca gac ctg gca tec gtc gac aac tec gag ttt Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe 705         710         715         720           cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act gag Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu 725         730         735           ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740         745         750           gcc cag agg ccc ccc gac ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg 2304         2304           Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly         2304	Leu	Ala	Pro	Ala	Pŗo	Pro	Gln	Val	Leu	Pro	Gln	Ala	Pro	Ala	Pro	Ala	
Pro Ala Pro Ala Met Val Ser Ala Leu Ala Gin Ala Pro Ala Pro Val 645         650         655           cca gtc cta gcc cca ggc cct cct cag gct gtg gcc cca cct gcc ccc         2016           Pro Val Leu Ala Pro Gly Pro Pro Gin Ala Val Ala Pro Pro Ala Pro 660         665         670           aag ccc acc cag gct ggg gaa gga acg ctg tca gag gcc ctg ctg cag Lys Pro Thr Gin Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu Gin 675         2064           Lys Pro Thr Gin Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu Gin 685         685           ctg cag ttt gat gat gaa gac ctg ggg gcc ttg ctt ggc aac agc aca 2112         2112           Leu Gin Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser Thr 690         695         700           gac cca gct gtg ttc aca gac ctg gca tcc gtc gac aac tcc gag ttt Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe 705         710         715         720           cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc aca aca act gag Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu 725         730         735           ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg 2256         2256           Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740         745         750           gcc cag agg ccc ccc gac cca gct cct gct cct gct cca ctg ggg gcc ccg ggg 2304         2304           Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly	625					630					635			٠		640	
Pro Ala Pro Ala Met Val Ser Ala Leu Ala Gin Ala Pro Ala Pro Val 645         650         655           cca gtc cta gcc cca ggc cct cct cag gct gtg gcc cca cct gcc ccc         2016           Pro Val Leu Ala Pro Gly Pro Pro Gin Ala Val Ala Pro Pro Ala Pro 660         665         670           aag ccc acc cag gct ggg gaa gga acg ctg tca gag gcc ctg ctg cag Lys Pro Thr Gin Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu Gin 675         2064           Lys Pro Thr Gin Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu Gin 685         685           ctg cag ttt gat gat gaa gac ctg ggg gcc ttg ctt ggc aac agc aca 2112         2112           Leu Gin Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser Thr 690         695         700           gac cca gct gtg ttc aca gac ctg gca tcc gtc gac aac tcc gag ttt Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe 705         710         715         720           cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc aca aca act gag Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu 725         730         735           ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg 2256         2256           Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740         745         750           gcc cag agg ccc ccc gac cca gct cct gct cct gct cca ctg ggg gcc ccg ggg 2304         2304           Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly																	
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cca gtc cta gcc cca ggc cct cct cag gct gtg gcc cca cct gcc ccc Pro Val Leu Ala Pro Gly Pro Pro Gln Ala Val Ala Pro Pro Ala Pro 660 665 670  aag ccc acc cag gct ggg gaa gga acg ctg tca gag gcc ctg ctg cag Lys Pro Thr Gln Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu Gln 675 680 685  ctg cag ttt gat gat gaa gac ctg ggg gcc ttg ctt ggc aac agc aca Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser Thr 690 695 700  gac cca gct gtg ttc aca gac ctg gca tcc gtc gac aac tcc gag ttt Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe 705 710 715 720  cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act gag Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu 725 730 735  ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740 745 750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg 2304 Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly	Pro	Ala	Pro	Ala	Met	Val	Ser	Ala	Leu	Ala	Gln	Ala	Pro	Ala	Pro	Val	
Pro Val Leu Ala Pro Gly Pro Pro Gln Ala Val Ala Pro Pro Ala Pro 660 665 670  aag ccc acc cag gct ggg gaa gga acg ctg tca gag gcc ctg ctg cag 2064 Lys Pro Thr Gln Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu Gln 675 680 685  ctg cag ttt gat gat gaa gac ctg ggg gcc ttg ctt ggc aac agc aca 2112 Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser Thr 690 695 700  gac cca gct gtg ttc aca gac ctg gca tcc gtc gac aac tcc gag ttt Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe 705 710 720  cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act gag Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu 725 730 735  ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg 2256 Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740 745 750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg 2304 Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly					645					650					655		
Pro Val Leu Ala Pro Gly Pro Pro Gln Ala Val Ala Pro Pro Ala Pro 660 665 670  aag ccc acc cag gct ggg gaa gga acg ctg tca gag gcc ctg ctg cag 2064 Lys Pro Thr Gln Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu Gln 675 680 685  ctg cag ttt gat gat gaa gac ctg ggg gcc ttg ctt ggc aac agc aca 2112 Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser Thr 690 695 700  gac cca gct gtg ttc aca gac ctg gca tcc gtc gac aac tcc gag ttt Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe 705 710 720  cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act gag Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu 725 730 735  ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg 2256 Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740 745 750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg 2304 Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly																	
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Lys Pro Thr Gln Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu Gln 675 680 685  ctg cag ttt gat gat gaa gac ctg ggg gcc ttg ctt ggc aac agc aca Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser Thr 690 695 700  gac cca gct gtg ttc aca gac ctg gca tcc gtc gac aac tcc gag ttt Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe 705 710 715 720  cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act gag Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu 725 730 735  ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740 745 750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg 2304 Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly				660					665					670			
Lys Pro Thr Gln Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu Gln 675 680 685  ctg cag ttt gat gat gaa gac ctg ggg gcc ttg ctt ggc aac agc aca Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser Thr 690 695 700  gac cca gct gtg ttc aca gac ctg gca tcc gtc gac aac tcc gag ttt Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe 705 710 715 720  cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act gag Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu 725 730 735  ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740 745 750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg 2304 Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly	•																
ctg cag ttt gat gat gaa gac ctg ggg gcc ttg ctt ggc aac agc aca Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser Thr 690 695 700  gac cca gct gtg ttc aca gac ctg gca tcc gtc gac aac tcc gag ttt Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe 705 710 720  cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act gag Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu 725 730  ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740 745 750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg 2304 Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly	aag	ccc	acc	cag	gct	ggg	gaa	gga	acg	ctg	tca	gag	gcc	ctg	ctg	cag	2064
ctg cag ttt gat gat gaa gac ctg ggg gcc ttg ctt ggc aac agc aca Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser Thr 690 695 700  gac cca gct gtg ttc aca gac ctg gca tcc gtc gac aac tcc gag ttt Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe 705 710  cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act gag Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu 725  ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly	Lys	Pro	Thr	Gln	Ala	Gly	Glu	Gly	Thr	Leu	Ser	Glu	Ala	Leu	Leu	Gln	
Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser Thr 690 695 700  gac cca gct gtg ttc aca gac ctg gca tcc gtc gac aac tcc gag ttt Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe 705 710 720  cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act gag Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu 725 730  ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740 745 750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly			675					680					685				
Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser Thr 690 695 700  gac cca gct gtg ttc aca gac ctg gca tcc gtc gac aac tcc gag ttt Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe 705 710 720  cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act gag Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu 725 730  ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740 745 750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly																	0110
gac cca gct gtg ttc aca gac ctg gca tcc gtc gac aac tcc gag ttt Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe 705 710 715 720  cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act gag Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu 725 730 735  ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740 745 750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly	_	_		_	-												2112
gac cca gct gtg ttc aca gac ctg gca tcc gtc gac aac tcc gag ttt  Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe 705 710 715 720  cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act gag Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu 725 730 735  ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740 745 750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly	Leu			Asp	Asp	Glu			Gly	Ala	Leu			' Asn	Ser	Thr	
Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe 705 710 715 720  cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act gag Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu 725 730 735  ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740 745 750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly		690					695					700	,				
Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe 705 710 715 720  cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act gag Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu 725 730 735  ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740 745 750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly										tac	at a			. +		. +++	2160
cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act gag Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu 725 730 735  ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740 745 750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly	_		_														2100
cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act gag  Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu  725  730  735  ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly  740  745  750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly	_		) Alc	ı vaı	. FIIC			, пес	nio	JCI			, ASI	. 561	. 010		
Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu 725 730 735  ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740 745 750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly	,05					,10	,				, 10					, 2 0	
Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu 725 730 730 735  ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740 745 750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly	cad	cac	rcto	r cto	ı aac	: cac	a a a a	: ata	a cct	ato	r acc		c cac	e aca	a act	t gag	2208
ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg 2256 Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740 745 750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg 2304 Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly				-		_											
ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca ggg Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740 745 750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly														÷			
Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly 740 745 750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg 2304  Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly																	
740 745 750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg 2304  Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly	ccc	ato	g cto	gato	g gag	; tac	c cct	ga e	g gct	ata	a act	t cg	c cta	a gt	gac	a ggg	2256
740 745 750  gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg 2304  Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly		-		-													
Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly						_											
Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly				-	•							-					-
	gco	caq	g ag	g cco	c cc	c ga	c cca	a gc	t cci	t gct	t cc	a ct	g gg	g gc	c cc	g ggg	2304
755 760 ⁻ 765	Ala	a Gli	n Ar	g Pro	o Pro	o Ası	p Pro	o Al	a Pro	o Ala	a Pr	o Le	u Gl	y Al	a Pr	o Gly	
			75	5				76	0.				76	5			

Ctc Ccc aat ggc Ctc Ctt tca gga gat gaa gac ttc tcc tcc att gcg 2352

Leu Pro Asn Gly Leu Leu Ser Gly Asp Glu Asp Phe Ser Ser Ile Ala
770

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785

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<211> 797

<212> PRT

<213> Aequorea victoria and human

<400> 14

180

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·185

1	Pro	Val	Leu	Leu	Pro	Asp	Asn	His	Tyr	Leu	Ser	Thr		Ser	Ala	Leu
			195					200					205			
	Ser	rys	Asp	Pro	Asn	Glu	Lys	Arg	Asp	His	Met		Leu	Leu	Glu	Phe
		210					215					220		•		
•	Val	Thr	Ala	Ala	Gly	Ile	Thr	Leu	Gly	Met	Asp	Glu	Leu	Tyr	Lys	Ser
	225					230					235					240
	Gly	Leu	Arg	Ser	Arg	Ala	Met	Asp	Glu	Leu	Phe	Pro	Leu	Ile	Phe	Pro
					245					250					255	
	Ala	Glu	Pro	Ala	Gln	Ala	Ser	Gly	Pro	Tyr	Val	Glu	Ile	Ile	Glu	Gln
				260					265					270		
	Pro	Lys	Gln	Arg	Gly	Met	Arg	Phe	Arg	Tyr	Lys	Cys	Glu	Gly	Arg	Ser
			275					280					285			
	Ala	Gly	Ser	Ile	Pro	Gly	Glu	Arg	Ser	Thr	Asp	Thr	Thr	Lys	Thr	His
		290					295					300				
	Pro	Thr	Ile	Lys	Ile	Asn	Gly	Tyr	Thr	Gly	Pro	Gly	Thr	Val	Arg	Ile
	305					310					315					320
	Ser	Leu	Val	Thr	Lys	Asp	Pro	Pro	His	Arg	Pro	His	Pro	His	Glu	Leu
					325					330					335	
	Val	Gly	Lys	Asp	Cys	Arg	Asp	Gly	Phe	Tyr	Glu	Ala	Glu	Leu	Cys	Pro
				340					345					350		
	Asp	Arg	Cys	Ile	His	Ser	Phe	Gln	Asn	Leu	Gly	Ile	Gln	Cys	Val	Lys
			355					360					365			
	Lys	Arg	Asp	Leu	Glu	Gln	Ala	Ile	Ser	Gln	Arg	Ile	Gln	Thr	Asn	Asn
		370					375					380				
	Asn	Pro	Phe	Gln	Val	Pro	Ile	Glu	Glu	Gln	Arg	Gly	Asp	Tyr	Asp	Leu
	385					390					395					400
	Asn	Ala	Val	Arg	Leu	Cys	Phe	Gln	Val	Thr	Val	Arg	Asp	Pro	Ser	Gly
					405	•				410					415	
	Arg	Pro	Leu	Arg	Leu	Pro	Pro	Val	Leu	Pro	His	Pro	Ile	Phe	Asp	Asn
		•		420	)				425	,				430	١	
	Arg	Ala	Pro	Asn	Thr	Ala	Glu	Leu	Lys	Ile	Cys	Arg	y Val	Asn	Arg	Asn
			435	5				440	•				445	• •		
	Ser	Gly	/ Ser	Cys	Let	ı Gly	Gly	/ Asp	Glu	ılle	Phe	Lev	Lev	Cys	Asp	Lys
		450	)				455	5				460	)			
	Val	. Glr	Lys	Glu	ı Asp	Ile	Glu	ı Val	. Tyr	Phe	: Thr	Gl ₃	, Pro	Gly	Trp	Glu
	465	<b>,</b>				470	)				475	5				480
_	Ala	Arc	Gly	Ser	Phe	Ser	Glr	n Ala	Asp	-Val	His	Arc	g Glr	ı Val	. Ala	Ile
					485	5				490	)				495	•
	Val	Phe	Arq	g Thr	Pro	Pro	туз	Ala	a Asp	Pro	Ser	: Le	ı Glr	n Ala	Pro	Val
				500	`				. 509					510	1	

51

Arg	Val	Ser	Met	Gln	Leu	Arg	Arg	Pro	Ser	Asp	Arg	Glu	Leu	Ser	Glu
		515					520					525			
Pro	Met	Glu	Phe	Gln	Tyr	Leu	Pro	Asp	Thr	Asp	Asp	Arg	His	Arg	Ile
	530					535					540		•		
Glu	Glu	Lys	Arg	Lys	Arg	Thr	Tyr	Glu	Thr	Phe	Lys	Ser	Ile	Met	Lys
545					550					555					560
Lys	Ser	Pro	Phe	Ser	Gly	Pro	Thr	Asp	Pro	Arg	Pro	Pro	Pro	Arg	Arg
				565					570					575	
Ile	Ala	Val	Pro	Ser	Arg	Ser	Ser	Ala	Ser	Val	Pro	Lys	Pro	Ala	Pro
			580					585					590		
Gln	Pro	Tyr	Pro	Phe	Thr	Ser	Ser	Leu	Ser	Thr	Ile	Asn	Tyr	Asp	Glu
		595					600					605			
Phe	Pro	Thr	Met	Val	Phe	Pro	Ser	Gly	Gln	Ile	Ser	Gln	Ala	Ser	Ala
	610					615					620				
Leu	Ala	Pro	Ala	Pro	Pro	Gln	Val	Leu	Pro	Gln	Ala	Pro	Ala	Pro	Ala
625					630					635					640
Pro	Ala	Pro	Ala	Met	Val	Ser	Ala	Leu	Ala	Gln	Ala	Pro	Ala	Pro	Val
				645					650					655	
Pro	Val	Leu	Ala	Pro	Gly	Pro	Pro	Gln	Ala	Val	Ala	Pro	Pro	Ala	Pro
			660					665					670		
Lys	Pro			Ala	Gly	Glu			Leu	Ser	Glu	Ala	Leu	Leu	Gln
		675					680					685			
Leu			Asp	Asp	Glu	_		Gly	Ala	Leu			Asn	Ser	Thr
	690					695			_		700		_		
		Ala	Val	Phe			Leu	Ala	Ser			Asn	Ser	Glu	Phe
705		_	_	_	710			_		715			_,		720
GIn	GIn	Leu	Leu			GLY	lie	Pro			Pro	HIS	Thr		Glu
_		_		725		_	1		730		_	-		735	
Pro	Met	Leu			Tyr	Pro	Glu			Thr	Arg	Leu			Gly
		_	740		_	_		745		_	-	<b>6</b> 3	750		<b>61</b>
Ата	Gin			Pro	Asp	Pro			Ala	Pro	ь ьег			Pro	Gly
<b>.</b>	_	755		_	_		760		61.		- D)-	765		- <b>-</b> 1 -	<b>.</b>
ren			ı GIŞ	, Let	ı Lev			, Asp	) GIV	ı Asp			Ser	116	. Ala
70	770		- D1-		- 73 7	775			. (1)	. 71	780				
		Asp	) LUE	e Ser			і гес	ı ser	GII			. sei	=		
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<211> 2394

<212> DNA

115

## <213> Aequorea victoria and human

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120

gct atc agt cag cgc atc cag acc aac aac ccc ttc caa gtt cct

125

Ala	Ile 130	Ser	Gln	Arg	Ile	Gln 135	Thr	Asn	Asn	Asn	Pro 140	Phe	Gln	Val	Pro	
ata	gaa	gag	cag	cgt	ggg	gac	tac	gac	ctg	aat	gct	gtg	cgg	ctc	tgc	480
Ile	Glu	Glu	Gln	Arg	Gly	Asp	Tyr	Asp	Leu	Asn	Ala	Val	Arg	Leu	Cys	
145					150					155					160	
						~~~		+	~~~	200	000	at a	000	at a	664	528
	-					_						ctc Leu				320
riie	GIII	val	1111	165	ALG	изр	110	Sei	170	ALG	110	ьеи	Arg	175	110	
				103					1,0					1,5		
cct	gtc	ctt	cct	cat	ccc	atc	ttt	gac	aat	cgt	gcc	ccc	aac	act	gcc	576
Pro	Val	Leu	Pro	His	Pro	Ile	Phe	Asp	Asn	Arg	Ala	Pro	Asn	Thr	Ala	
			180					185					190			
_		_										agc				624
Glu	Leu	-	He	Cys	Arg	Val			Asn	Ser	GIA	Ser	Cys	Leu	GIÀ	
		195					200					205				
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Gly	Asp	Glu	Ile	Phe	Leu	Leu	Cys	Asp	Lys	Val	Gln	Lys	Glu	Asp	Ile	
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Glu	Val	Tyr	Phe	Thr	Gly	Pro	Gly	Trp	Glu			Gly	Ser	Phe	Ser	
225					230					235					240	
Caa	act	ast	ata	cac	cas	caa	ato	, acc	att	ata	++	. caa	acc	cct	ccc	768
	-	_													Pro	. • •
0111	7124	7156	· · · · · ·	245	_	011.	• • • • •		250			9		255		•
	•															
tac	gca	gac	: ccc	ago	ctg	cag	gct	cct	gtç	, cgt	gto	tcc	ātg	caç	ctg	816
Tyr	Ala	Asp	Pro	Ser	Leu	Gln	Ala	Pro	Va]	. Arg	, Val	l Ser	Met	Glr	Leu	
			260)				265	5				270)		
		-		_		_									g tac	864
Arg	Arc			Asp	Arç	g Glu			: GI	ı Pro	Me1			e Glr	n Tyr	
		275)				280	J				285	,			
cto	g cca	a gat	aca	a gad	gat	cgt	ca	c` cg	g at	c gaç	g ga	g aaa	a cgt	: aaa	a agg	912

Leu	Pro 290	Asp	Thr	Asp	Asp	Arg 295	His	Arg	Ile	Glu	Glu 300	Lys	Arg	Lys	Arg	
aca	tat	gag	acc	ttc	aag	agc	atc	atg	aag	aag	agt	cct	ttc	agc	gga	960
Thr	Tyr	Glu	Thr	Phe	Lys	Ser	Ile	Met	Lys	Lys	Ser	Pro	Phe	Ser	Gly	
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ccc	acc	gac	ccc	caa	cct	сса	cct	cga	cac	att	act	ata	cct	tcc	cqc	1008
								Arg								
				325				,	330					335		
	•		.	~+~			222	~ ~~	~~~	000	222	+ - +	222	+++	200	1056
-		_		_				gca								1030
Ser	Ser	Ala	340	vaı	Pro	ьys	Pro	Ala 345	Pro	GIN	Pro	ryr	350	rne	Int	
tca	tcc	ctg	agc	acc	atc	aac	tat	gat	gag	ttt	ccc	acc	atg	gtg	ttt	1104
Ser	Ser	Leu	Ser	Thr	Ile	Asn	Tyr	Asp	Glu	Phe	Pro	Thr	Met	Val	Phe	
		355					360					365				
													•			
			_					tcg								1152
Pro		_	Gln	Ile	Ser		Ala	Ser	Ala	Leu			Ala	Pro	Pro	
	370					375					380	•				
633	ata	at a	000	cad	act	cca	acc	cct	acc	cct	act	cca	acc	ato	ata	1200
	-			_	_			Pro								
385		DCu	110	Q	390					395					400	
tca	gct	ctg	gcc	cag	gcc	cca	gcc	cct	gto	сса	gto	: cta	gco	cca	ggc	1248
Ser	Ala	Leu	Ala	Gln	Ala	Pro	Ala	Pro	Val	Pro	Val	Leu	Ala	Pro	Gly	•
				405					410	1				415	•	
													_			
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Pro	Pro	Glr			. Ala	Pro	Pro			Lys	Pro) Thi			Gly	
			420	,				425)				430	,		
gaa	a gga	acc	, cto	tca	gaç	g gcc	cto	g cto	, cag	g ct	g caq	g tti	: gat	gat	gaa	1344
Glu	Gly	Th:	Leu	ı Ser	Gli	ı Ala	Let	a Lev	ı Glr	Le	ı Glı	n Phe	e Asp	Ası	Glu	
		435	5				440	0 -				44	5			
								,								1000
gad	ctq	g ggg	g gcc	: tto	g cti	ggd	aa	c ago	caca	a gad	c cc	a gc	t gt	g tt	c aca	1392

Asp	Leu 450	Gly	Ala	Leu	Leu	Gly 455	Asn	Ser	Thr	Asp	Pro 460	Ala	Val	Phe	Thr	
gac	ctg	gca	tcc	gtc	gac	aac	tcc	gag	ttt	cag	cag	ctg	ctg	aac	cag	1440
Asp	Leu	Ala	Ser	Val	Asp	Asn	Ser	Glu	Phe	Gln	Gln	Leu	Leu	Asn	Gln	
465					470					475					480	
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ggc	ata	cct	gtg	gcc	ccc	cac	aca	act	gag	ccc	atg	ctg	atg	gag	tac	1488
Gly	Ile	Pro	Val	Ala	Pro	His	Thr	Thr	Glu	Pro	Met	Leu	Met	Glu	Tyr	
				485					490					495		
cct	gag	gct	ata	act	cgc	cta	gtg	aca	ggg	gcc	cag	agg	ccc	ccc	gac	1536
Pro	Glu	Ala	Ile	Thr	Arg	Leu	Val	Thr	Gly	Ala	Gln	Arg	Pro	Pro	Asp	
			500					505					510			
			s													
	-		gct		-		-	_								1584
Pro	Ala		Ala	Pro	Leu	Gly			Gly	Leu	Pro		Gly	Leu	Leu	
		515					520					525				
tos	~~ ~	ast.	gaa	~ ~ ~	++0	+ 00	+ 00	2++	aca	asc.	ato		tto	tca	acc	1632
			Glu												_	1002
561	530	-	Giu	лзр	1116	535	JCI	110	2120	nop	540	_	1110	501	7.24	
	550					333					0.10					
ctg	ctq	agt	cag	atc	agc	tcc	ttg	gat	cca	ccg	gto	gcc:	acc	atg	gtg	1680
Leu	Leu	Ser	Gln	Ile	Ser	Ser	Leu	Asp	Pro	Pro	Val	Ala	Thr	Met	Val	
545					550					555					560	
agc	aag	ggc	gag	gag	ctg	ttc	acc	ggg	gtg	gtg	ccc	ato	ctg	gto	gag:	1728
Ser	Lys	Gly	/ Glu	Glu	Leu	Phe	Thr	Gly	Val	Val	Pro) Ile	Leu	ı Val	Glu	
				565	•				570)				575	•	
ctg	gac	ggc	gac	gta	aac	ggc	cac	aag	ttc	ago	gt	g tco	ggc	gaç	ggc	1776
Leu	Asp	Gl7	/ Asp	Val	. Asn	Gly	His	Lys	Phe	Ser	Val	L Sei	: Gl	/ Glu	ı Gly	
			580)				585	•				590)		
-															acc	1824
Glu	Gl)	_		Thr	Туг	Gl?			ı Thı	: Lei	ı Ly:			e Cys	Thr	-
		59!	ō				600)				605	5			
acc	ggo	c aa	g cto	gcc	e gto	g ccc	c t g	g ccc	c acc	c cto	c gt	g ac	c acc	c ct	g acc	1872

56

Thr	Gly 610	Lys	Leu	Pro	Val	Pro 615	Trp	Pro	Thr	Leu	Val 620	Thr	Thr	Leu	Thr	
tac	ggc	gtg	cag	tgc	ttc	agc	cgc	tac	ccc	gac	cac	atg	aag	cag	cac	1920
Tyr	Gly	Val	Gln	Cys	Phe	Ser	Arg	Tyr	Pro	Asp	His	Met	Lys	Gln	His	
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gac	ttc	ttc	aag	tcc	gcc	atg	ccc	gaa	ggc	tac	gtc	cag	gag	cgc	acc	1968
Asp	Phe	Phe	Lys	Ser	Ala	Met	Pro	Glu	Gly	Tyr	Val	Gln	Glu	Arg	Thr	
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atc	ttc	ttc	aag	gac	gac	ggc	aac	tac	aag	acc	cgc	gcc	gag	gtg	aag	2016
Ile	Phe	Phe	Lys	Asp	Asp	Gly	Asn	Tyr	Lys	Thr	Arg	Ala	Glu	Val	Lys	
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ttc	gag	ggc	gac	acc	ctg	gtg	aac	cgc	atc	gag	ctg	aag	ggc	atc	gac	2064
Phe	Glu	Gly	Asp	Thr	Leu	Val	Asn	Arg	Ile	Glu	Leu	Lys	Gly	Ile	Asp	
		675					680					685	•			
ttc	aag	gag	gac	ggc	aac	atc	ctg	ggg	cac	aag	ctg	gag	tac	aac	tac	2112
Phe	Lys	Glu	Asp	Gly	Asn		Leu	Gly	His	Lys			Tyr	Asn	Tyr	
	690					695					700					
	-			_			_	_		_	_				atc	2160
		His	Asn	Val	-		Met	Ala	Asp			Lys	Asn	Gly	Ile	
705					710					715					720	
_	, ,			-	*	_					-		_		cag	2208
Lys	Val	Asr	Phe	_		Arg	His	Asn			Asp	Gly	, Ser		Gln	
	٠			725					730				-	735		
ctc	gcc	gac	cac	tac	c cag	cag	aac	acc	ccc	ato	ggc	gac	gge	ccc	gtg	2256
Leu	ı Ala	Asp	His	Туг	Glr	Gln	Asr	Thr	Pro	Ile	e Gly	/ Asr	Gl3	/ Pro) Val	
			740)				745	,				750)		
cto	cto	cco	gac	: aad	cac	tac	cto	gago	acc	caç	g tco	gc	cto	gago	c aaa	2304
Let	1 Let	Pro	Asp	Ası	n His	Tyr	Let	ı Ser	Thi	Glr	i Sei	Ala	a Le	se:	r Lys	
		755	5				760)				769	5			

gac ccc aac gag aag cgc gat cac atg gtc ctg ctg gag ttc gtg acc

57

Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val Thr
770 780

gcc gcc ggg atc act ctc ggc atg gac gag ctg tac aag taa
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2394

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180

195

<213> Aequorea victoria and human

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185

Glu Leu Lys Ile Cys Arg Val Asn Arg Asn Ser Gly Ser Cys Leu Gly

2001

190

Gly	Asp 210	Glu	Ile	Phe	Leu	Leu 215	Cys	Asp	Lys	Val	Gln 220	Lys	Glu	Asp	Ile
Glu	Val	Tyr	Phe	Thr	Gly	Pro	Gly	Trp	Glu	Ala	Arg	Gly	Ser	Phe	Ser
225					230					235			٠		240
Gln	Ala	Asp	Val	His	Arg	Gln	Val	Ala	Ile	Val	Phe	Arg	Thr	Pro	Pro
				245					250					255	
Tyr	Ala	Asp	Pro	Ser	Leu	Gln	Ala	Pro	Val	Arg	Val	Ser	Met	Gln	Leu
			260					265					270		
Arg	Arg	Pro	Ser	Asp	Arg	Glu	Leu	Ser	Glu	Pro	Met	Glu	Phe	Gln	Tyr
		275					280					285			
Leu	Pro	Asp	Thr	Asp	Asp	Arg	His	Arg	Ile	Glu	Glu	Lys	Arg	Lys	Arg
	290					295					300				
Thr	Tyr	Glu	Thr	Phe	Lys	Ser	Ile	Met	Lys	Lys	Ser	Pro	Phe	Ser	Gly
305					310					315					320
Pro	Thr	Asp	Pro	Arg	Pro	Pro	Pro	Arg	Arg	Ile	Ala	Val	Pro	Ser	Arg
				325					330					335	
Ser	Ser	Ala	Ser	Val	Pro	Lys	Pro	Ala	Pro	Gln	Pro	Tyr		Phe	Thr
			340					345					350		
Ser	Ser	Leu	Ser	Thr	Ile	Asn	Tyr		Glu	Phe	Pro			Val	Phe
		355			_		360			_		365		ъ	D
Pro		_	Gln	Ile	Ser		Ala	Ser	Ala	Leu			Ala	Pro	Pro
	370		_			375		D	77-	D	380		71-	Mat	Wa 1
		. Leu	Pro	Gln			Ala	Pro	, Ата			Pro	Ата	Mec	400
385		.	7. 3	63 -	390		. 7.] ~	Dwa		395		Ton	71-	Pro	
Ser	. ATS	ь гел	і АІа	405		PIC) Ala	PIC	410		, vai	. neu	AIO	415	Gly
Dro	. Dwa	· C1-	. 71 a			Dro	Pro	. Al=			: Pro	n Thr	· Glr		Gly
PIC	PIC	GII	420		. Ala	LIC	, , ,	425		, Ly.	, , , , ,	, 1111	430		. 011
Gli	. G1s	, Thr			- Glu	. Ala	ı Ler			ı Lei	ı Glr	n Phe			Glu
010	. 01)	435			. 010	• •••	440		- 0			445			
Ast	D. Lei			ı Lei	ı Lev	ı Glv			Thi	c Ası	o Pro			. Phe	Thr
	450		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			455				•	460		÷		
Ası			a Sei	. Val	l Asr	Ası	n Sei	c Gli	ı Phe	e Gli	n Gli	n Lei	ı Let	ı Asr	n Gln
46					470					47					480
Gl	y Il	e Pro	o Vai	l Ala	a Pro	> Hi:	s Thi	r Thi	r Gl	u Pro	o Me	t Le	ı Met	t Glu	ı Tyr
-	-			48					49					495	
- Pro	o-G1	u Ala	a Ile	e Th:	r Ar	g Le	u Va∶	1 - Th:	r -G1	y Al	a G1	n Ar	g Pr	o-Pro	o Asp
			50					50					51		
Pr	o Al	a Pr	o Ala	a Pr	o Le	u Gl	y Al	a Pr	o G1	y Le	u Pr	o As:	n Gl	y Le	u Leu
		51	5				52	0 '				52	5		

59

Ser	Gly	Asp	Glu	Asp	Phe	Ser	Ser	He	Ala	Asp		Asp	Phe	Ser	Ala
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Leu	Leu	Ser	Gln	Ile	Ser	Ser	Leu	Asp	Pro	Pro	Val	Ala	Thr	Met	Val
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Ser	Lys	Gly	Glu	Glu	Leu	Phe	Thr	Gly	Val	Val	Pro	Ile	Leu	Val	Glu
				565					570					575	
Leu	Asp	Gly	Asp	Val	Asn	Gly	His	Lys	Phe	Ser	Val	Ser	Gly	Glu	Gly
			580					585					590		
Glu	Gly	Asp	Ala	Thr	Tyr	Gly	Lys	Leu	Thr	Leu	Lys	Phe	Ile	Cys	Thr
		595					600					605			
Thr	Gly	Lys	Leu	Pro	Val	Pro	Trp	Pro	Thr	Leu	Val	Thr	Thr	Leu	Thr
	610					615					620				
Tyr	Gly	Val	Gln	Cys	Phe	Ser	Arg	Tyr	Pro	Asp	His	Met	Lys	Gln	His
625					630					635					640
Asp	Phe	Phe	Lys	Ser	Ala	Met	Pro	Glu	Gly	Tyr	Val	Gln	Glu	Arg	Thr
				645					650					655	
Ile	Phe	Phe	Lys	Asp	Asp	Gly	Asn	Tyr	Lys	Thr	Arg	Ala	Glu	Val	Lys
			660					665					670		
Phe	Glu	Gly	Asp	Thr	Leu	Val	Asn	Arg	Ile	Glu	Leu	Lys	Gly	Ile	Asp
		675					680					685			
Phe	Lys	Glu	Asp	Gly	Asn	Ile	Leu	Gly	His	Lys	Leu	Glu	Tyr	Asn	Tyr
	690					695					700				
Asn	Ser	His	Asn	Val	Tyr	Ile	Met	Ala	Asp	Lys	Gln	Lys	Asn	Gly	Ile
705					710					715					720
Lys	Val	Asn	Phe	Lys	Ile	Arg	His	Asn	Ile	Glu	Asp	Gly	Ser	Val	Gln
				725					730	1				735	
Leu	Ala	Asp	His	Tyr	Gln	Gln	Asn	Thr	Pro	lle	Gly	Asp	Gly	Pro	Val
			740					745					750	i	
Leu	Leu	Pro	Asp	Asn	His	Tyr	Leu	Ser	Thr	Gln	Ser	Ala	Leu	Ser	Lys
		755	•				760					765	•		
Asp	Pro	Asn	Glu	Lys	Arg	Asp	His	Met	Val	. Lev	Leu	Glu	Phe	Val	Thr
	770)				775	ı				780)	,		
Ala	Ala	Gly	, Ile	Thr	Leu	Gly	Met	Asp	Glu	ı Let	Туг	Lys	5		
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<210> 17

<211> 2757

<212> DNA

<213> Aequorea victoria and human

130

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Met	Val	Ser	Lys	Gly	Glu	Glu	Leu	Phe	Thr	Gly	Val	Val	Pro	Ile	Leu	
1				5					10					15		
gtc	gag	ctg	gac	ggc	gac	gta	aac	ggc	cac	aag	ttc	agc	gtg	tcc	ggc	96
Val	Glu	Leu	Asp	Gly	Asp	Val	Asn	Gly	His	Lys	Phe	Ser	Val	Ser	Gly	
			20					25					30			
gag	ggc	gag	ggc	gat	gcc	acc	tac	ggc	aag	ctg	acc	ctg	aag	ttc	atc	144
Glu	Gly	Glu	Gly	Asp	Ala	Thr	Tyr	Gly	Lys	Leu	Thr	Leu	Lys	Phe	Ile	
		35					40					45	_			
tgc	acc	acc	ggc	aag	ctg	ccc	gtg	ccc	tgg	ccc	acc	ctc	gtg	acc	acc	192
					Leu											
	50					55			_		60					
ctg	acc	tac	ggc	gtg	cag	tgc	ttc	agc	cgc	tac	ccc	gac	cac	atg	aag	240
					Gln				-			-		-		
65		_	_		70	_			_	- 75		_			80	
cag	cac	gac	ttc	ttc	aag	tcc	gcc	atg	ccc	gaa	ggc	tac	gtc	cag	gag	288
					Lys											
		_		85	_				90		-	-		95		
cgc	acc	atc	ttc	ttc	aag	gac	gac	ggc	aac	tac	aaq	acc	cac	qcc	gag	336
	•				Lys											
			100		-	-	_	105		-	-		1:10			
gtg	aaq	ttc	gag	aac	gac	acc	cta	ata	aac	cac	ato	gag	cta	aad	ggc	384
										-			_		Gly	
	-	115					120			9		125			2	
						-										
atc	gac	tto	aac	gan					cto	gan	cac	: aan	cto	r gad	, tac	432
															Tyr	
-	- Z-		- 2 -			1				1					- 3 -	

135

aac Asn 145																480	
ggc		_														528	
• •	_		-	-			_	_				atc Ile		-		576	
	, ,	_	_		-				_	-		cag Gln 205		•	-	624	
		_										ctg Leu				672	
		•	-			Thr			_	-	Glu	ctg Leu				720	
		_		_	Gly					Pro					ccg	768	
_				Glu		_			Arg		_	_		Gly	gcc Ala	816	
		_	Lys					ı Val					Phe		gcc Ala	864	
		Phe	_				Phe					s Thi			e atc	912	

				_		gga Gly										960
303					310					J13					320	
-		_		_		gaa										1008
Val	His	Lys	Arg	-	His	Glu	Phe	Val		Phe	Ser	Cys	Pro	_	Ala	
				325					330					335		
gac	aag	ggt	сса	gcc	tcc	gat	gac	ccc	cgc	agc	aaa	cac	aag	ttt	aag	1056
Asp	Lys	Gly	Pro	Ala	Ser	Asp	Asp	Pro	Arg	Ser	Lys	His	Lys	Phe	Lys	
			340					345					350			
																1104
		•			-	ccc Pro			_	=		-			-	1104
116	1112	355	TYL	Ser	261	110	360	rne	Cys	лэр	1113	365	GLY	Der	Бей	
ctg	tat	gga	ctc	atc	cac	cag	ggg	atg	aaa	tgt	gac	acc	tgc	atg	atg	1152
Leu	Tyr	Gly	Leu	Ile	His	Gln	Gly	Met	Lys	Cys.	Asp	Thr	Cys	Met	Met	
	370					375					380					
aat	ata	cac	aan	cac	tac	gtg	ato	aat	att	ccc	age	cta	tat	aac	acq	1200
			_	-	-	Val	_		•		-	_	_			
385			•	_	390					395		•	-	_	400	
		_		-	_	ggc										1248
Asp	His	Thr	Glu			Gly	Arg	Ile			Gln	Ala	His			
				405					410					415		
agg	gac	gtc	ctc	att	gto	ctc	gta	aga	gat	gct	aaa	aac	ctt	gta	cct	1296
Arg	Asp	Val	Leu	Ile	Val	Leu	Val	Arg	Asp	Ala	Lys	Asn	Leu	Val	Pro	
			420					425					430			
					-										att	1344
мес	Asp	435		GIY	, ren	ser	440		ryr	vaı	гуз	ьеи 445		Leu	ılle	
		-					440		-					-		-
ccc	gat	ccc	: aaa	agt	gaç	ago	aaa	cag	aag	acc	: aaa	acc	ato	: aaa	tgc	1392
Pro	Asp	Pro	Lys	Ser	Glu	Ser	Lys	Gln	Lys	Thr	Lys	Thr	Ile	. Lys	Cys	
	450)				455	,				460)				

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tcc	ctc	aac	cct	gag	tgg	aat	gag	aca	ttt	aga	ttt	cag	ctg	aaa	gaa	1440
Ser	Leu	Asn	Pro	Glu	Trp	Asn	Glu	Thr	Phe	Arg	Phe	Gln	Leu	Lys	Glu	
465	•				470					475					480	
										•						
tcg	gac	aaa	gac	aga	aga	ctg	tca	gta	gag	att	tgg	gat	tgg	gat	ttg	1488
Ser	Asp	Lys	Asp	Arg	Arg	Leu	Ser	Val	Glu	Ile	Trp	Asp	Trp	Asp	Leu	
				485					490					495		
acc	agc	agg	aat	gac	ttc	atg	gga	tct	ttg	tcc	ttt	ggg	att	tct	gaa	1536
Thr	Ser	Arg	Asn	Asp	Phe	Met	Gly	Ser	Leu	Ser	Phe	Gly	Ile	Ser	Glu	
			500					505					510			
ctt	cag	aag	gcc	agt	gtt	gat	ggc	tgg	ttt	aag	tta	ctg	agc	cag	gag	1584
Leu	Gln	Lys	Ala	Ser	Val	Asp	Gly	Trp	Phe	Lys	Leu	Leu	Ser	Gln	Glu	
		515					520			•		525				
gaa	ggc	gag	tac	ttc	aat	gtg	cct	gtg	cca	cca	gaa	gga	agt	gag	gcc	1632
Glu	Gly	Glu	Tyr	Phe	Asn	Val	Pro	Val	Pro	Pro	Glu	Gly	Ser	Glu	Ala	
	530					535					540					
aat	gaa	gaa	ctg	cgg	cag	aaa	ttt	gag	agg	gcc	aag	atc	agt	cag	gga	1680
Asn	Glu	Glu	Leu	Arg	Gln	Lys	Phe	Glu	Arg	Ala	Lys	Ile	Ser	Gln	Gly	
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Thr	Lys	Val	Pro	Glu	Glu	Lys	Thr	Thr	Asn	Thr	Val	Ser	Lys	Phe	Asp	
				565					570					575		
																i.
aac	aat	ggc	aac	aga	gac	cgg	atg	aaa	ctg	acc	gat	ttt	aac	ttc	cta	1776
Asn	Asn	Gly	Asn	Arg	Asp	Arg	Met	Lys	Leu	Thr	Asp	Phe	Asn	Phe	Leu	
			580					585					⁻ 590			
atg	gtg	ctg	ggg	aaa	ggc	ago	ttt	ggc	aag	gto	: atg	ctt	tca	gaa	cga	1824
Met	Val	Leu	Gly	Lys	Gly	Ser	Phe	Gly	Lys	: Val	Met	Leu	Ser	Glu	a Arg	
		595	1				600	i				605				
aaa	ggc	aca	gat	gag	, ctc	: tat	gct	gtg	aag	ato	cto	g aag	aag	gac	gtt	1872
Lys	Gly	Thr	Asp	Glu	. Leu	туг	Ala	Val	Lys	: Ile	e Lev	ı Lys	Lys	Asp	Val	
	610)				615					620)				

gtg	atc	caa	gat	gat	gac	gtg	gag	tgc	act	atg	gtg	gag	aag	cgg	gtg	1920
Val	Ile	Gln	Asp	Asp	Asp	Val	Glu	Суѕ	Thr	Met	۷al	Glu	Lys	Arg	Val	
625					630					635					640	
-	_	_			_	ccg										1968
Leu	Ala	Leu	Pro	Gly	Lys	Pro	Pro	Phe		Thr	Gln	Leu	His	Ser	Cys	
				645					650					655	,	
	_		_	-	-	ctg										2016
Phe	Gln	Thr		Asp	Arg	Leu	Tyr		Val	Met	Glu	Tyr		Asn	Gly	
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	-		_			atc										2064
GIY	Asp		мет	Tyr	HIS	Ile		GIN	vai	GIÀ	Arg		ьys	GIU	PIG	
		675					680					685				
cat	act	at a	+++	t a.c	act	gca	a a a	att	acc	atc	aat	cta	ttc	ttc	tta	2112
	-	-			-	Ala										
1113	690	Val	rne	ryr	AIG	695	014	110	23.10	110	700		1110	11.0	Dea	
	030					033					, , ,					
caq	agt	aaq	ggc	atc	att	tac	cgt	gac	cta	aaa	ctt	gac	aac	gtg	atg	2160
_	_	_				Tyr										
705					710					715					720	
	•															
ctc	gat	tct	gag	gga	cac	atc	aag	att	gcc	gat	ttt	ggc	: atg	tgt	aag	2208
Leu	Asp	Ser	Glu	Gly	His	Ile	Lys	Ile	Ala	Asp	Phe	Gly	Met	Cys	Lys	
				725	•				730	ı				735	.	
gaa	aac	ato	: tgg	gat	ggg	gtg	aca	acc	aag	aca	tto	tgt:	ggc	act	: cca	2256
Glu	Asn	Ile	Trp	Asp	Gly	Val	Thr	Thr	Lys	Thr	Phe	Cys	Gly	/ Thi	Pro	
			740)				745					750)		
																•
gac	tac	ato	gcc	ccc	gag	ata	att	gct	tat	caç	ccc	tat	ggg	g aaq	g tcc	2304
Asp	Tyr	Ile	e Ala	Pro	Glu	lle	Il€	e Ala	Туг	Glr	Pro	туз	c Gly	y Ly:	s Ser	
		755	5				760)				76	5			
•			-		-			-	•			-		-		
	_			-							-		_		t ggg	2352
Val	_	_	Trp	Ala	a Ph∈			Lev	ı Leı	туз			t Le	u Ala	a Gly	
	770)				775	5				78	0				

				-			-						caa			2400
	Ala	Pro	Phe	Glu	_	Glu	Asp	GIu	Asp		Leu	Phe	Gln	Ser		
785					790					795					800	
atg	gaa	cac	aac	gta	gcc	tat	ccc	aag	tct	atg	tcc	aag	gaa	gct	gtg	2448
Met	Glu	His	Asn	Val	Ala	Tyr	Pro	Lys	Ser	Met	Ser	Lys	Glu	Ala	Val	
				805					810					815		
gcc	atc	tgc	aaa	ggg	ctg	atg	acc	aaa	cac	сса	ggc	aaa	cgt	ctg	ggt	2496
Ala	Ile	Cys	Lys	Gly	Leu	Met	Thr	Lys	His	Pro	Gly	Lys	Arg	Leu	Gly	
			820					825					830			
tgt	gga	cct	gaa	ggc	gaa	cgt	gat	atc	aaa	gag	cat	gca	ttt	ttc	cgg	2544
Cys	Gly	Pro	Glu	Gly	Glu	Arg	Asp	Ile	Lys	Glu	His	Ala	Phe	Phe	Arg	
		835					840					845				
•																
		=					_	_				_	ccc			2592
Tyr		Asp	Trp	Glu	Lys		Glu	Arg	Lys	Glu			Pro	Pro	Tyr	
	850					855					860					
aag	cca	aaa	qct	aga	gac	aaq	aga	gac	acc	tcc	aac	ttc	gac	aaa	gag	2640
_			_	_	-	_	_	-					_		Glu	
865		_			870	-	-	_		875					880	
ttc	acc	aga	cag	cct	gtg	gaa	ctg	acc	ccc	act	gat	aaa	ctc	ttc	atc	2688
Phe	Thr	Arg	Gln	Pro	Val	Glu	Leu	Thr	Pro	Thr	Asp	Lys	Leu	Phe	lle	
			•	885					890					895	1	
	•	_	-			_									cca	2736
Mec	ASN	ьeu	_		ASD	GIU	Pne	905		Pne	ser	ryr	9.10		Pro	
			900					303	•				ジエし	•		
gag	ttt	gto	att	aat	gtq	tac	i									2757
			Ile													
		915)													

<210> 18

<211> 918

<212> PRT

<213> Aequorea victoria and human

<400> 18

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Val	Glu	Leu	Asp	Gly	Asp	Val	Asn	Gly	His	Lys	Phe	Ser	Val	Ser	Gly
			20					25					30		
Glu	Gly	Glu	Gly	Asp	Ala	Thr	Tyr	Gly	Lys	Leu	Thr	Leu	Lys	Phe	Ile
		35					40					45			
Cys		Thr	Gly	Lys	Leu		Val	Pro	Trp	Pro		Leu	Val	Thr	Thr
	50					55		_		_	60				
	Thr	Tyr	Gly	Val		Cys	Phe	Ser	Arg		Pro	Asp	His	Met	
65		_		5 1	70		2.2.			75	61		** - 3	61 -	80
GIn	His	Asp	Phe	Phe 85	гуs	Ser	Ala	Met		GIu	GIÀ	Tyr	vaı	95	GIU
Ara	Thr	Tlo	Pho		Luc	A e n	Aen	Gly	90 Asp	Tur	Luc	Thr	Ara		Glu
Arg	1111	116	100	THE	шуз	лэр	лэр	105	ASII	1 Y L	цуs	1111	110	7310	Oru
Val	Lvs	Phe		Gly	Asp	Thr	Leu	Val	Asn	Arq	Ile	Glu		Lys	Gly
	-	115		-	-		120			_		125		_	_
Ile	Asp	Phe	Lys	Glu	Asp	Gly	Asn	Ile	Leu	Gly	His	Lys	Leu	Glu	Tyr
	130					135					140				
Asn	Tyr	Asn	Ser	His	Asn	Val	Tyr	Ile	Met	Ala	Asp	Lys	Gln	Lys	Asn
145					150					155					160
Gly	Ile	Lys	Val	Asn	Phe	Lys	Ile	Arg	His	Asn	Ile	Glu	Asp	Gly	Ser
				165					170					175	
Val	Gln	Leu	Ala	Asp	His	Tyr	Gln	Gln	Asn	Thr	Pro	Ile	Gly	Asp	Gly
			180					185					190		
Pro	Val			Pro	Asp	Asn		Tyr	Leu	Ser	Thr			Ala	Leu
		195				_	200					205			
Ser	_	_	Pro	Asn	Glu			Asp	His	: Met			Leu	Glu	Phe
17.5.7	210		71.	C1		215		. Cl.	. Ma -	. 7	220				
225		Ата	Ата	СТУ			Leu	Gly	Met	. Asp 235		г теп	ııyı	гуз	240
		7.50	Ser	n ra	230		Met	Ala	Aer			. או -	. Glu	Pro	
Cly	Беи	ALG	Ser	245	_	БУЗ	nec.	. Ala	250		AIC	LATO	Gly	255	
Pro	Ser	Glu	เติร			Ser	Thr	: Val			A1=	r Arc	r I.vs		
			260					265		,			270		
Leu	Arq	Gln			Val	His	Glu	ı Val		s Asn	. His	. Lys			: Ala
	_	275					280		-			285			

Arg Phe Phe Lys Gln Pro Thr Phe Cys Ser His Cys Thr Asp Phe Ile Trp Gly Phe Gly Lys Gln Gly Phe Gln Cys Gln Val Cys Cys Phe Val Val His Lys Arg Cys His Glu Phe Val Thr Phe Ser Cys Pro Gly Ala Asp Lys Gly Pro Ala Ser Asp Asp Pro Arg Ser Lys His Lys Phe Lys Ile His Thr Tyr Ser Ser Pro Thr Phe Cys Asp His Cys Gly Ser Leu Leu Tyr Gly Leu Ile His Gln Gly Met Lys Cys Asp Thr Cys Met Met Asn Val His Lys Arg Cys Val Met Asn Val Pro Ser Leu Cys Gly Thr Asp His Thr Glu Arg Arg Gly Arg Ile Tyr Ile Gln Ala His Ile Asp Arg Asp Val Leu Ile Val Leu Val Arg Asp Ala Lys Asn Leu Val Pro Met Asp Pro Asn Gly Leu Ser Asp Pro Tyr Val Lys Leu Lys Leu Ile Pro Asp Pro Lys Ser Glu Ser Lys Gln Lys Thr Lys Thr Ile Lys Cys Ser Leu Asn Pro Glu Trp Asn Glu Thr Phe Arg Phe Gln Leu Lys Glu Ser Asp Lys Asp Arg Arg Leu Ser Val Glu Ile Trp Asp Trp Asp Leu Thr Ser Arg Asn Asp Phe Met Gly Ser Leu Ser Phe Gly Ile Ser Glu Leu Gln Lys Ala Ser Val Asp Gly Trp Phe Lys Leu Leu Ser Gln Glu Glu Gly Glu Tyr Phe Asn Val Pro Val Pro Pro Glu Gly Ser Glu Ala Asn Glu Glu Leu Arg Gln Lys Phe Glu Arg Ala Lys Ile Ser Gln Gly Thr Lys Val Pro Glu Glu Lys Thr Thr Asn Thr Val Ser Lys Phe Asp Asn Asn Gly Asn Arg Asp Arg Met Lys Leu Thr Asp Phe Asn Phe Leu Met Val Leu Gly Lys Gly Ser Phe Gly Lys Val Met Leu Ser Glu Arg

Lys		Thr	Asp	Glu	Leu	_	Ala	Val	Lys	Ile		Lys	Lys	Asp	Val
•••	610	63	_	_	_	615	63	G	m).		620	6 1	-	_	,, , ,
	TTE	GIn	Asp	Asp		vaı	Glu	Cys	Thr		vaı	Glu	гуs	Arg	
625	_				630		_		_	635		_			640
Leu	Ala	Leu	Pro	_	Lys	Pro	Pro	Phe		Thr	Gln	Leu	His		Cys
				645					650					655	
Phe	Gln	Thr	Met	Asp	Arg	Leu	Tyr	Phe	Val	Met	Glu	Tyr	Val	Asn	Gly
			660					665					670		
Gly	Asp	Leu	Met	Tyr	His	Ile	Gln	Gln	Val	Gly	Arg	Phe	Lys	Glu	Pro
		675					680	-				685			
His	Ala	Val	Phe	Tyr	Ala	Ala	Glu	Ile	Ala	Ile	Gly	Leu	Phe	Phe	Leu
	690					695					700				
Gln	Ser	Lys	Gly	Ile	Ile	Tyr	Arg	Asp	Leu	Lys	Leu	Asp	Asn	Val	Met
705					710					715					720
Leu	Asp	Ser	Glu	Gly	His	Ile	Lys	Ile	Ala	Asp	Phe	Gly	Met	Cys	Lys
				725					730					735	
Glu	Asn	Ile	Trp	Asp	Gly	Val	Thr	Thr	Lys	Thr	Phe	Cys	Gly	Thr	Pro
			740					745					750		
Asp	Tyr	Ile	Ala	Pro	Glu	Ile	Ile	Ala	Tyr	Gln	Pro	Tyr	Gly	Lys	Ser
		755					760					765			
Val	Asp	Trp	Trp	Ala	Phe	Gly	Val	Leu	Leu	Tyr	Glu	Met	Leu	Ala	Gly
	770					775			•		780				
Gln	Ala	Pro	Phe	Glu	Gly	Glu	Asp	Glu	Asp	Glu	Leu	Phe	Gln	Ser	Ile
785					790					795					800
Met	Glu	His	Asn	Val	Ala	Tyr	Pro	Lys	Ser	Met	Ser	Lys	Glu	Ala	Val
				805		_		_	810			_		815	
Ala	Ile	Cys	Lys	Gly	Leu	Met	Thr	Lys	His	Pro	Gly	Lys	Arg	Leu	Gly
		_	820	_				825			_	_	830		-
Cys	Glv	Pro	Glu	Glv	Glu	Ara	Asp	Ile	Lvs	Glu	His	Ala	Phe	Phe	Arg
-	_	835					840					845			,
Tvr	Ile			Glu	Lvs	Leu			Lvs	Glu	Ile			Pro	Tyr
- 3 -	850			-	_,_	855		9	-,-		860		,		- 1 -
Lvs			Δla	Δνα	Aen			Asn	Thr	Ser			Δen	T.VS	Glu
865		2,0		••••	870		, ,,,,			875			· ···op	2,5	880
		7 ~~~	. C1 ~	. Dwo				. mb~	Dwa				. T	Dho	Ile
rne	1111	AIG	GII			GIU	red	1 1111			ASL	р гус	neu		
Mat	7	т	. 7n -	885		63	. P		890			· ~	- m'-	895	
met	ASN	μeυ	_		AST	GIU	i Lue		_	, rue	ser	туг			Pro
C.	~ ~ 1	.	900					905	•				910	,	
Glu	Phe			Asr	val										
		915)					•							